

Factors influencing environmentally-significant consumption by higher-income households: A multi-method study of South Devon for social marketing application

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Abstract

The aim of this thesis is to identify and examine the factors influencing environmentally-significant consumption (ESC) by higher-income households (HIH) to provide theoretical and social marketing insights. Income is highly related to levels of energy consumption and associated environmental damage, but despite research documenting the links between income and energy use, there is a lack of enquiry into what shapes the ESC patterns of HIH and therefore how behavioural interventions might be best fashioned to reduce energy use. A postmodern approach to consumption that recognises the interplay between the psychological, the social and the cultural (a psycho-socio-cultural approach), indicates that ESC is not an automatic consequence of wealth but rather mediated through the way consumption practices are symbolically connected with the satisfaction of underlying needs, including the need for identity and other psychological orientations. These connections are not universal or static but socially and culturally contextual and influenced by many factors, particularly marketing. Social marketing, as marketing for social good, therefore has a critical role to play in altering these symbolic connections and therefore consumption behaviour.

To design and market alternative lower energy consumption through social marketing interventions, an understanding of how environmentally-significant consumption is connected with modes of need satisfaction and psychological orientations is necessary. Additionally, an understanding of constraints to even higher levels of consumption is useful. This study provides initial research momentum, using a HIH sample from South Devon. Primary data from a quantitative questionnaire was supported in design by qualitative interviews. These provide descriptive and correlational results about what shapes the consumption of; leisure flights, large-engine cars and new durable products, as well as the role of environmentally-significant psychological orientations, specifically: values; materialism; environmental concern and identity. The research also provides a comparative analysis between a group of HIH who have participated in Global Action Plan's EcoTeam programme, and the general sample of HIH.

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Definitions

ESC – Environmentally-significant consumption

HIH – Higher-income householders

GAP – Global Action Plan

SDR – Socially-desirable responding

NEP – New Environmental Paradigm

CHAPTER ONE

Introduction

1 INTRODUCTION

Two key defining features of contemporary society are firstly, the extent to which environmental life-sustaining systems have been undermined and secondly the wealth inequalities that on a national and global level are becoming increasingly stark (Jackson and Michaelis, 2003).

The scale and nature of the environmental crisis we face is becoming clear, with biodiversity loss (Stern 2006; Spicer 2006), top-soil erosion (Pimental and Kounang, 1998), ocean acidification (Royal Society, 2005) and climate change (IPCC, 2007), all among those being cited potentially catastrophic for humanity. All these issues relate to how much energy society is able to harness and how that energy is used, which makes energy a good proxy for environmental sustainability and in turn a useful currency for pinpointing priority areas for change (Dürr, 1994; Gatersleben et al., 2002; Goldblatt, 2005). Despite decades of rhetoric and actions to both increase energy efficiency and decouple energy consumption from economic growth, global final energy consumption increased by 26 per cent between 1990 and 2006, with around 90% of final energy consumption from fossil fuels (IEA, 2009).

At the same time, wealth inequality is a growing problem that is now recognised to be at extreme levels, with the top 10% of the world's wealthy owning around 85% of the world's wealth and the bottom 50% owning barely 1% (Davies et al., 2006). This means that an average adult in the top 1% is more than 13,000 times richer than an average person in the bottom 10%; and an average adult in the top 10% is 3000 times richer. To put this into perspective, total individual assets of only US\$61,041 is needed to qualify as a member the top 10%. This issue is not just a global or developing world problem, as some of largest inequalities are in the UK and the USA (Pieterse, 2002).

Although seemingly separate, the two challenges of unequal resource use and the unsustainability of consumption patterns are linked because wealth is highly connected to energy consumption, as this thesis will detail (e.g. Lutzenhiser and

Hackett, 1993; Burney, 1995; Perrings and Ansuategi, 2000; Moll et al., 2005, Lenzen et al., 2006; Vringer et al. 2007). The importance of household income in shaping energy use has been largely overlooked but is beginning to be more openly discussed, with a number of calls for research to be focused on this area (University of Sussex, 2006; DEFRA, 2008b; Wier et al., 2000). Most notably, the role of more wealthy individuals has led to a paper in the Proceedings of the National Academy of Science to call for international and national climate change policies to be “derived by summing the excess emissions of all “high emitter” individuals in a country—“high emitters” are those whose emissions exceed a universal individual emission cap.” (Chakravarty et al., 2009:884).

Rather than primarily contributing further to the evidence on the links between income and consumption, this thesis will focus on providing insights into how the link might be weakened, thereby informing behavioural intervention strategies. The topic is a broad and complex one, and therefore it is vital to establish clarity about the scope of the research. Wealth has been the focus of much sociological and economic theory over the decades, from Veblen’s theory of wasteful societies (1899) to Galbraith’s writings on affluence (1958) and Bourdieu’s theory of cultural distinction (1984). Although research which theoretically applies these concepts to the field of sustainable consumption would be both valid and welcome, this research instead takes a Pragmatic stance with the overarching aim of contributing to theoretical insights within the sustainable consumption field as well as practitioner insights that will guide social marketing and future research into what shapes the ESC of HIH.

1.1 Structure of the chapter

This introductory chapter will set out the above context in detail. It will firstly outline the research that suggests householders, and specifically HIH, are a crucial focus for research. It will then suggest reasons why, within the field of sustainable consumption, HIH have not attracted as much academic or policy attention as may have been expected. The chapter will then move to considering behavioural intervention options, introducing two popular and distinct approaches of

psychological orientation and social marketing. The aims and objectives of the thesis will then be introduced followed by the structure of the thesis.

1.2 Sustainability and household energy use

Although definitions of consumption can be limited to the using up of goods and services (Oxford Dictionaries, 2011), consumption, in its broadest sense, can refer to all human changes of materials and energy (Myers, Vincent, & Panayotou, 1997; Stern, 1997), therefore encompassing goods, activities and events (Holt, 1997). Others have extended this to the non-material, such as visual consumption (Schroeder, 2002). Almost all contemporary consumption is reliant in some form on energy that is underpinned by fossil fuels. These fuels, to greater or lesser extents, produce carbon dioxide which is an important greenhouse gas. Due to the high volumes of carbon dioxide produced by our consumption, it is seen as the major cause of human induced climate change (Stern, 2006) and ocean acidification which could have major consequences for ocean ecosystems (Royal Society, 2005).

There are also a wide range of other environmental consequences of consumption that are based on the scale and patterns of energy use, rather than the energy source. For example, habitat destruction caused by land change and fragmentation is a major cause of biodiversity loss (Spicer, 2006) and modern food systems have a wide range of environmental impacts, particularly in respect to top soil erosion and nitrogen depletion (Tilman, Fargione, Wolff, D'Antonio et al. 2001). The broad links between the level of energy use and a range of environmental issues mean the one can be used as a proxy for the other (Gatersleben et al., 2002; Goldblatt, 2005). Although only an approximate relationship, it is useful to use differences in energy intensities of consumption practices as the basis of decisions about which areas of consumption are the most important to focus on. In other words energy significant consumption could be considered approximate to environmentally-significant consumption (ESC)

If both direct energy use (in terms of fuel and electricity) and indirect energy use (through embodied energy in goods and services) are considered, households are the key site of energy 'pull-through' in society. If only direct energy is considered, households are generally estimated to be responsible for 30% of national energy use, but if direct and indirect energy are considered this rises to an estimated 70-80% (Moll et al., 2005). This makes households, and specifically the householders within them, a critical area for intervention. Householders are largely disempowered to make changes in some areas (e.g. the back-end operations of companies and policy), but many environmentally-significant householder decisions face few physical restrictions and therefore could be considered discretionary.

Although there is a growing awareness of environmental issues associated with consumption, this has ironically been mirrored by an increase in environmentally impactful consumption across a range of household consumption areas. For example, between 1980 and 2004, UK domestic energy consumption rose by 22% (DEFRA, 2006), which is attributed in large part to lighting trends and the number of household appliances (DTI, 1997). Additionally, between 1996 and 2004, despite a decrease of 6% in fuel used, greenhouse gas emissions from private vehicles rose by 9% mostly because of increased distances driven – a rise of 17% in the period (DEFRA, 2006).

Although the individual is the definitive site of consumption behaviour, and, where individual opinions are sought, the results can only be reliably attributed to that individual, it is however, important to explicitly recognise the role of the household as the main social unit where individual consumption decisions are negotiated and environmental impacts shared. Although this research does not explicitly consider the household interactions that shape consumption decisions, consumption is recognised as shared by individuals within a household and this is reflected in the research design (Chapter Five) and through the term 'householder', rather than individual, being used throughout this thesis.

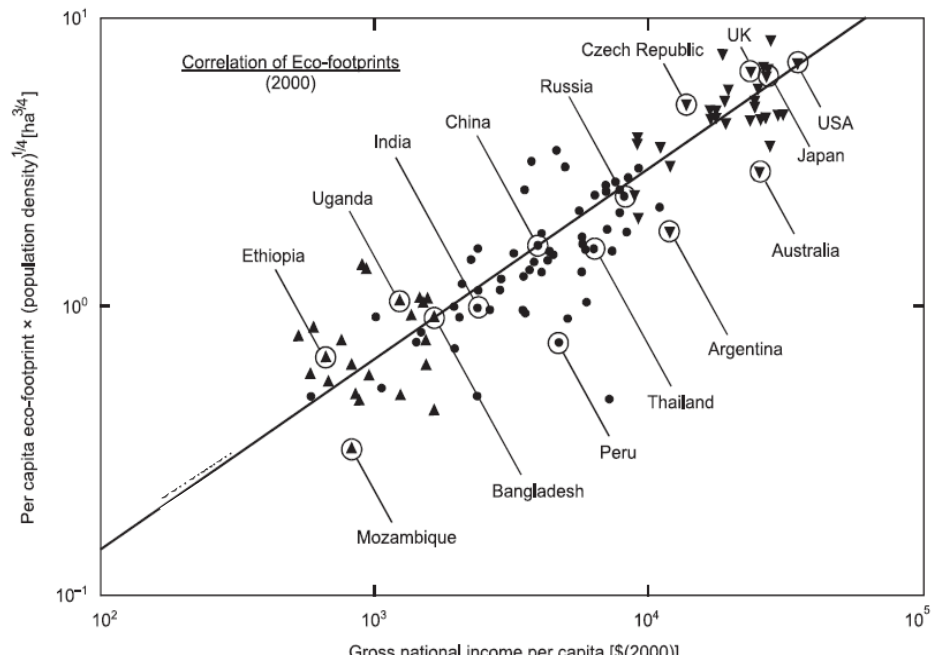
1.2.1 Higher-income households and sustainable consumption

1.2.1.1 National level data

The links between income and energy use show that HIH are one of the most important groups on which to focus behavioural change interventions. The link between energy and income is visible at the international, national and household levels.

At the international level, Perrings and Ansuategi (2000) concluded that GDP and consumption, as two separate measures of wealth, both increased monotonically with carbon dioxide emissions. A useful way to consider wealth at the international level is through ecological footprint assessment. This is a method of representing the per capita utilisation of renewable natural resources and land required to absorb wastes expressed as a global hectare (Hails, 2006). Hammond's study (2006) analysed 118 countries, defined as low, medium or high income, to assess the relative importance of population, wealth and pollution on per capita ecological footprints. The relationship between wealth and ecological footprints can be seen in Figure 1.1. Hammond states that "an individual country's environmental impact is largely related to its stage of economic development." and that "national environmental footprints are strongly dependent on economic wealth and only weakly on population density." (Hammond, 2006:32).

Figure 1.1 Ecological footprints and national per capita income



Source: Hammond, 2006

▼ = high income country ● = medium income country ▲ = low income country

Despite evidence of a strong income-energy relationship at the international level, some have conversely argued that although increased income initially results in higher energy use and environmental impact, after a certain level of income has been reached environmental issues reduce as incomes rise. This position rests on the inverse-U relationship between income and environmental degradation, which has been recorded for certain environmental pollutants, a relationship known as an environmental Kuznet curve (EKC) (Panayotou, 1997; Grossman and Krueger, 1993). However, a wide range of research into EKC has however shown that no empirical evidence for such broad claims exist, even calling into question the validity of some of the EKCs found for individual pollutants (Deacon and Norman, 2004; Barbier, 1997; Arrow et al., 1995). One of the strongest claims against EKC is the issue of ‘distancing’. EKC data tend to assess only direct consumption rather than the embodied energy and emissions indirectly produced through consumption

of imported goods and services. Because this energy is often increasingly imported through trade as a country's income grows, excluding this indirect energy gives an incomplete picture (Rothman, 1998). In an increasingly globalised market, 'distancing,' and the distorting effects it can have on notions of responsibility, the role of wealth and the types of response required, are critical.

In rejection of the EKC and other arguments, a large number of governments and academics have called for the curbing of wealthy country consumption impacts (WCED, 1987; Agarwal and Narain, 1991; Redclift, 1996; Srinivasan et al., 2002). These calls are normally made at the global level, however there is a strong case for tackling consumption by higher-income groups at the individual and household level, because affluent consumers are not restricted by country borders. Myers and Kent (2003) estimate that the 850 million established affluent consumers (The World Bank, 2002) have recently be joined by over a billion new ones across 17 developing and 3 transition countries.

The role of consumption by the growing global wealthy has led to the consulting firm KPMG isolating wealth as one of ten sustainability 'megaforces' affecting global society and business (KPMG, 2012). Additionally, a paper in the Proceedings of the National Academy of Science, calls for international and national climate change policies to be "derived by summing the excess emissions of all "high emitter" individuals in a country—"high emitters" are those whose emissions exceed a universal individual emission cap." (Chakravarty et al. 2009:884). The emission cap is deemed to be 10.8 tonnes per person and 1.13 billion individuals globally exceed this. These conclusions strongly suggest that understanding what structures consumption by wealthy groups, rather than just considering national systems of production or consumption, is vital. However, data revealing how changes in consumption by those with higher-incomes might be achieved, is not apparent. Reflecting this, Chakravarty et al. state that their scheme "does not specify how any nation meets its responsibilities" (Chakravarty et al., 2009:884).

1.2.1.2 Household level data

The links between income and energy are also highly evident at the household level. Car use is one example of ESC where income is an important driver. Numerous studies show the significant relationships between income and car ownership and use. Although the relationship appears consistently strong across countries, different countries demonstrate varying income elasticity of demand within consumption categories, suggesting that the income-energy relationship is not monotonic, but varies depending on context. Italy and the United States, for example, have a historically higher proportional rise in car ownership for every unit of income than Norway or Denmark (IEA, 2004). The United States has shown not only high income elasticity for cars but growing levels of consumption, with the country now containing more cars than people (IEA, 2004). The 2005 United States Energy Information Administration (EIA) report on household vehicle use states that income and vehicle miles travelled since 1983 have followed a “near lock-step formation” with a growth in income of 3.2% average between 1983 and 2001, and a growth in car travel of 3.6% (EIA, 2005:18).

The fuel efficiency of car ownership has also been linked to increasing income levels (EIA, 2001b; 2001c). Additionally, wealth has been shown to have a “dramatic effect” on the number of cars per household with around 0.1 cars being added for every \$5,000 increase in income (EIA, 2005:12). This link is particularly important as car ownership is believed to be the biggest predictor of car usage (IEA, 2004) and the strongest statistical predictor of total national energy needs (EIA, 2005:10).

Most of the assessments of the role of income on ESC, such as that for ecological footprints and cars presented above, are based on national data which are extrapolated to a per capita or household level. At the household level, possibly the only area of substantial empirical research about the role of income in environmental degradation, is in terms of direct energy use in the home (fuel use and electricity). A strong, positive correlation between household income and direct energy use (household fuel and electricity) is consistently reported (e.g.

Lutzenhiser and Hackett, 1993; Burney, 1995; Perrings and Ansuategi, 2000; Moll et al., 2005, Lenzen et al., 2006; Vringer et al. 2007). Vringer and colleagues (2007) found that for the 2304 households they studied, income accounted for around 60% of variance in energy use. Similarly, Lutzenhiser and Hackett's (1993) study of mixed income Californian residents, showed that those in the highest income bracket (more than US\$40,000) consumed on average more than twice the direct household energy than the lowest, had twice the amount of large energy using appliances and used over twice the amount of energy for automobile use. Their results showed that variations in energy use at the lower income levels were adequately explained by other independent variables, but at the higher income level, income became a vital driver of energy consuming practices. Furthermore, a study of electricity consumption in 93 countries showed per-capita income to be the most significant driver (Burney, 1995).

Although household energy use in policy terms is generally equated with direct energy, some research indicates that the role of indirect energy use may be more important, reportedly accounting for more than 50% of total energy use (Moll and Norman, 2005). A number of household metabolism or 'input-output' assessments have investigated both direct and indirect energy use, sometimes for more than 300 consumption practices (Lenzen et al., 2006; Moll et al., 2005). One piece of research into Danish households concludes that "high income families show, in most cases, indirect CO₂ emissions of more than 7t CO₂/consumer unit/year (or more than 40%) above the average of all families." (Wier et al., 2001:271).

The relationship between income and indirect energy use is very strong, although not monotonic. Again, the relationship varies between countries: for example, a doubling of income has been found to result in an increase in household energy consumption of 67% in India, 90% in Denmark, with most other countries somewhere in between (Lenzen et al., 2006). Interestingly, studies indicate that the proportion of indirect energy use tends to increase as incomes rise, meaning the relative role of direct energy use falls (Moll et al., 2005).

As well as underlining the importance of income, these studies of direct and indirect energy use highlight more specific considerations regarding income. Firstly, because indirect energy use is related to income levels and yet indirect energy is so rarely considered, it is probable that the energy consumption of high-income households, although known to be proportionately high, has been underestimated. Secondly, because indirect energy use is far more complicated to measure and account for, it is likely that even household metabolism studies will miss important indirect impacts of HIH consumption, which may undermine any seeming reduction in energy intensity. For example, details of how goods were delivered to the home or the impact of hobbies or holiday preferences may drastically alter energy consumption and yet are very difficult to pick up in large scale studies which necessitate many data assumptions. Thirdly, it is clear that increases in energy intensity as a result of income are of little importance: Moll et al.'s study (2005) shows clearly that in terms of a nation's energy use, although overall energy intensity falls slightly between the lowest income group to the highest (a reduction of 23% for the UK), the increase in overall energy use (over 300% for the UK), undermines this intensity reduction. This means that studies into the income energy use relationship at the household level should ideally consider absolute levels of consumption across a range of ESC.

The above data highlight some of the research that documents the strong relationship between income and energy use. However, the fact that incomes are not monotonically related to energy consumption and vary by country, suggests that the relationship between wealth and energy use is culturally contextual and that different energy consumption patterns are possible (Lutzenhiser, 1997; Dietz and Rosa, 1997; Lenzen et al., 2006). The importance of affluent householder groups to ESC, along with the fact that these relationships are not automatic, indicates that those households with higher-incomes would be a useful group to target for behavioural change research interventions.

As well as potential reductions in energy use, there are four other key reasons for targeting behavioural interventions at HIH. Firstly, they have the financial means and frequently the inclination (Rogers, 1995), to be early adopters of often

expensive environmental products and technologies that need help to become established (Sawin, 2004). These products can be monetarily out of the reach of less wealthy consumers early on, but with the HIH adoption may become more affordable as critical mass is reached and economies of scale are created (Rogers, 1995).

Secondly, the over-consumption by a few with substantive effects on the many relatively low level consumers is an ethical issue, arguably requiring intervention of some kind.

Thirdly, those with high incomes are often socially and professionally influential, having the possibility to exert influence structurally and politically through their public activities. This influence extends to providing visual stimulus to each other, and aspiring others as to which consumption norms distinguish them from 'the rest' (Dittmar et al., 1989; Bourdieu, 1984; Veblen, 1899). Douglas and Isherwood believe that those who are richer "lead demand, and their leadership endows all other activities with value...Their switches in fashion change the price structure all down the line, and their preferences have the power to be self-sustaining." (Douglas and Isherwood 1979:136).

Finally, although some maintain that income positively relates to subjective well-being, as people feel successful in relation others, and often report a greater sense of security (La Barbera and Gurhan, 1997; Levett, 2003; Meyer and Uys, 2006), an increasing amount of data indicate that income is only weakly related to subjective wellbeing (Ahuvia, 2007). Others conclude it may even result in negative welfare (Kasser and Ryan, 2003; Jackson, 2005b).

These secondary factors are as potentially impactful and enduring as the actual energy use reductions that can be made by HIH through behavioural interventions.

1.2.2 Factors limiting research into the environmentally-significant consumption of higher-income householders

Despite the importance of income to ESC, the available data on income and energy use only exists because income is a key socio-demographic variable that is often automatically included in research, along with a range of other factors known to often exert influence. However, there is a growing recognition of the need to focus research specifically on HIH and why and how they consume. For example, the University of Sussex Energy Group in a consultation response to DEFRA appealed that: “As energy consumption tends to increase with income levels, any measures...to induce behavioural change should also be directed to high income groups, as well as the particularly identified priority groups.” (Sussex Energy Group, 2006:5). Similarly, DEFRA has recognised that the groups most willing and able to engage in pro-environmental behaviours are higher-income segments, (DEFRA, 2008) and that these higher-income groups “include many households with significant carbon (and wider environmental) footprints” (DEFRA, 2008:9). Within the health arena it has also been; “widely recognized that social marketing campaigns to influence lifestyle have been most successful in changing behaviour among people with higher levels of education and income, who also have more control over their lives. While these campaigns were at first marginally successful, they have been least effective for the most disadvantaged populations, and have had the unintended effect of increasing health inequality between socioeconomic levels” (Labonte, 1998 in Public Health Agency of Canada, 2009:3). These appeals do not appear to have translated into targeted research, with an exception of Hurth (2006).

In an academic context there are two theoretical issues that are likely to be restricting research into HIH consumption. Firstly, sustainable consumption research to date has tended to focus on reported pro-environmental behaviours, such as recycling and everyday curtailment behaviours. These are frequently low barrier behaviours and these are often positively correlated to those with higher

incomes (see Chapter Two for details), therefore creating the impression that those with higher-incomes may lead more environmentally benign lifestyles and as such are not an important focus for research. However, as has been outlined above, when environmentally-significant behaviour rather than pro-environmental behaviour is considered, HIH are usually shown to be significant. Consequently, it is argued here that ESC practices should be the focus rather than those practices considered to be emblematic of environmentally friendly lifestyles.

This perspective is more aligned with the conception of environmentally-significant consumption, which Stern and colleagues argue should drive research agendas (1997). The value of such an approach has been argued by others (Gatersleben et al., 2002; Jager, 2004; Barr et al., 2011). Gatersleben et al., (2002) concluded that “self-reported proenvironmental behavior and household energy use are two different constructs that are related to different motivational variables and demographics” (p.347) in that pro-environmental behaviour is relatively environmentally benign and in their study was related to environmental attitudes, whereas energy use is environmentally impactful and was strongly related to income. Additionally, these two types of behaviour were only very marginally correlated.

A secondary reason for the lack of attention to HIH is likely to be that the rational approach to human behaviour, which has dominated policy and academic research for some time (Hackett and Lutzenhiser, 1991; Jackson, 2005), assumes a central yet constrained role for income. From this perspective individuals are considered reasonable, self-interested decision-makers who have stable preferences for goods, and who, with perfect information, consume market goods in a manner that maximises their utility. Consequently, as long as perfect information exists, prices and income guide behaviour (Linschiedt, 2004). Income is seen as providing the key opportunity through which utility maximisation can be pursued, and the rational approach offers specific and limited options for reducing the energy consumption of HIH. Therefore, although the rational perspective recognises the fundamental relationship between income levels and consumption levels, it offers limited insight as to why this is the case. This is because it is assumed that due to the drive for

maximised utility, increased income will always result in increased consumption across stable consumption preferences, as long as perfect information exists. By definition, this assumes a proportional relationship between income and energy use, all other things being equal, therefore leaving no room for decoupling.

The lack of specific research in the area of HIH behaviour change mirrors the lack of attention to the role of income at a government and practitioner level. The reasons might stem from the free market capitalist paradigm which pervades both sectors. Questioning the role of wealth is culturally difficult within a capitalist society where self-interested wealth accumulation is central. Also, it appears government are wary of being seen to 'get at the rich' as was suggested to the author by the head of sustainable consumption at DEFRA in 2009 (pers. obs., 2009).

Stern and colleagues (1997) support the view that our current paradigm restricts analysis of income, with political unfeasibility, and the complexity and political difficulties of intervention, key reasons they believed a focus on income at a household level was likely to be difficult. Political issues with confronting the role of wealth, are also cited by Andreasen (2003).

On a more practical level, one study found that although local government and NGOs recognise stark energy inequalities and the strategic importance of engaging HIH, they did not engage them. One key reason noted was that HIH were perceived as unfathomable, with little direction available in how to target their energy use behaviour, in comparison with the number of clear levers, and wide range of research, available in respect to lower income groups (Hurth, 2006).

1.2.3 Behavioural intervention options

The role of a free market paradigm in how the income-energy use relationship is perceived as important, because this in turn influences the range of feasible options for intervention by practitioners. Free market economics' rational view of the consumer and the goal of a free market strongly precludes interfering in

consumer choice. Wissenburg notes: “People’s needs – for company, children, food, technology, travel and trinkets – are private affairs; control, if possible at all, is impermissible.’ (1998:212). A perspective mirrored in society, with the government concluding that: “people believe that in a market economy it is not a matter for Government to dictate to them what they can and cannot consume” (DoH, 2004:19). The public, they state, demand autonomy in their consumption choices and do not want to be forced to make changes (DoH, 2004).

From a rational economic perspective, there are, therefore, a limited number of options for reducing ESC by HIH. The income of HIH could be reduced, for example, through taxes; the cost of negative consumption practices can be increased (either by increasing the price of the negative behaviour or monetarily incentivising the desired behaviour); or information regarding the threat/benefit of a behaviour to utility maximisation can be enhanced (Linscheidt, 2004; Winkler and Winett, 1982). The first two options are frequently utilised but only in limited ways, being generally politically unattractive. Furthermore, in the case of ESC such as flying, taxes are often found to be highly regressive (Brand et al., 2008). Therefore, possibly from a lack of alternative options within our economic paradigm, information provision has been relied on heavily in the past as a way of tackling undesirable consumption patterns in order to correct environmental ‘market externalities’.

The view by government that providing more information on the negative implications of certain consumption choices, is the most appropriate response to unsustainable consumption is something clearly visible (Barr, 2003). A wide range of information ‘awareness raising’ campaigns can be seen as reflecting this, such as the ‘Are you doing your bit?’ environmental campaign and the ‘five a day’ health drive (Barr, 2003; Wellings et al., 2006). However, numerous studies of the role of information in guiding behaviour, dating back to the 1970’s, have shown that information provision has been shown to be generally ineffective on its own (Kohlenberg et al., 1976; Hayes and Cone, 1977; Winett et al., 1978). The partial role that information plays in altering behaviour means that relying on such awareness campaigns has been recognised as a deeply flawed strategy for some

time (Burgess et al., 1998; Blake, 1999; Owens, 2000; Kollmys and Agyman, 2002; Darnton, 2004). Academic evidence has been underlined by government commissioned assessments, highlighting the relative lack of success of information campaigns on effecting actual behaviour change (Wellings et al., 2006). As well as being an ineffective behavioural tool, the campaigns, although often targeting particular behaviour, are generally aimed at the population *en mass*, rather than being targeted at a particular group who are affected by specific behavioural drivers (Barr, 2003; Wellings et al., 2006). This, combined with the lack of attention to the role of wealth, means it is not surprising that no reference to targeting HIH by government can be found.

Government understands the need to re-examine its framework of how consumers are perceived (DEFRA, 2007a). However, consumer behaviour is a very complex domain and alternative approaches are numerous and not entirely satisfactory. Wide ranging disciplines such as engineering, neurology, political sciences and anthropology have developed many different theoretical perspectives and models with which to represent consumer behaviour (Jackson, 2005). These models often consider the internal aspects of decision making such as values, attitudes, personal norms or habits, or external contexts such as institutional structures, regulations and social practices and are often accused of parsimony in the quest for a practicable approach to research (Jackson, 2005).

More sophisticated models combine both internal and external factors to create integrative approaches (Giddens, 1984; Bagozzi et al., 2002). However, these models have been criticised for either still not fully reflecting the complex and multi-faceted nature of consumption or being so complicated that they are unimplementable (Jackson, 2005). Many conclude that it is unlikely that any one model will ever be able to capture the complexity of consumer behaviour usefully (Jackson, 2005; Kollmus and Agyman, 2002), let alone in a way which can be used for practical implementation. Jackson's comprehensive review of theories for motivating sustainable consumption clearly sums up the issues faced:

“Human motivations are so multi-faceted that about the only thing one can say with absolute certainty is that it is virtually impossible to derive universal

causal models with which to construct behaviour change policies in different domains. Searching for robust and useful things to say about consumer motivations and behaviours is often, therefore, a case of weighing up the 'balance of evidence' from a wide variety of studies from different kinds of perspectives and establishing broad understandings from which to inform more detailed and more specific policy development." (Jackson, 2005:6).

Consequently, it must be recognised that any practicable approach to consumer research will necessarily be reductionist in nature. The question therefore is which approach or approaches are most appropriate, and in relation to this particular piece of research, which are most appropriate for understanding what shapes the ESC of HIH.

In terms of alternative research and implementation options to information provision, two key approaches present themselves, both of which are traditionally interpreted within the individualist psychological approach to behaviour, and which themselves have strong links with the rational approach. The first, grounded mainly in academic environmental psychology research, is that of understanding what psychological orientations support or negatively influence pro-environmental behaviour. The second approach, grounded mostly in a practitioner realm, is social marketing, which draws its approach to influencing a 'change in behaviour for a social good', from conventional marketing.

This thesis will argue (Chapter Four) that although different and sometimes conflicting, the social marketing and psychological orientation perspectives can be seen as necessarily complementary. Viewing them in this way relies on moving from a rational economic perspective and instead utilising a postmodern psycho-socio-cultural approach to behaviour, which then places social marketing as a key vehicle for intervention. Hence, this study is designed specifically to combine a study of psychological orientations (and socio-demographics) of a distinct group (here HIH) with a behavioural specific study about which needs are perceived to be fulfilled by certain types of ESC, and what may be constraining even higher levels of that consumption – in order to influence social marketing interventions.

1.2.4 Aims and objectives

The overall aim of the research is to identify and examine the factors influencing environmentally-significant consumption by higher-income householders, in order to provide theoretical insights and insights for social marketing interventions.

To achieve the above aim, the thesis has three primary objectives:

Objective One: To identify the key environmentally-significant psychological orientations and socio-demographics of higher-income householders and how these relate to a selection of environmentally-significant consumption behaviours.

Objective Two: To provide insights into the needs-based drivers and constraints for higher-income householders in respect to a selection of environmentally-significant consumption behaviours.

Objective Three: To explore the differences between participants in a specific Global Action Plan household campaign and the general higher-income population

Although the first two objectives have been contextualised in Section 1.2.3, the third objective requires some introduction. It is useful to understand if current approaches to social marketing are discernibly influencing the ESC of HIH or their underlying psychological orientations, therefore providing information as to how they might be improved. In this context, the third objective relates to a particular practioner example of social marketing – that of EcoTeams which is run by Global Action Plan, a Non-governmental Organisation (NGO) who are a sponsor of this research. The EcoTeams programme primarily deals with specific environmental related behaviours and addresses these within particular social groups. Although EcoTeams does not overtly try to influence psychological orientations, given the interrelationship between behaviours and psychological orientations, using a psycho-socio-cultural lens, it would be expected that higher levels of environmentally relevant psychological orientations, as well as lower levels of ESC, would be identifiable, compared with the general population of HIH.

There are a number of practioners for whom the objectives of this research is relevant. The social marketing framework readily implies use for both NGO's,

government departments (both national and local) and 'quangos' (quasi governmental organisations) who have for a number of years pursued social marketing as a route to creating more socially favourable behaviours in populations (Barr, 2003; Wellings et al., 2006). However in the context of changing perceptions of corporate social responsibility (e.g. Porter and Kramer, 2011) the role and opportunity to utilize marketing within profit-making organisations in order to create sustainable markets and relationships (Hurth, 2011) means a that this thesis is also of relevance to private organisations – particularly those who serve or who wish to serve an affluent market.

1.2.5 Structure of the thesis

This thesis will initially outline the two key realms of literature, which inform the research. Chapter Two is directly related to Objective One and will introduce the literature relating to the most relevant psychological orientations utilised by practitioners in environmental social science. The chapter will briefly introduce the environmental psychology field and its perceived utility for sustainable consumption interventions. This will be followed by a more detailed overview of four key concepts considered relevant for this research: general values, the specific values of materialism and environmental concern, and identity. Literature surrounding the potential influence of these psychological orientations on ESC will be outlined, as will socio-demographic antecedents, with a particular focus on what is known about any relationship to income.

Chapter Three relates specifically to Objective Two and will address needs-based drivers and constraints to the particular behavioural categories under consideration. Initially, it will outline what a social marketing approach to behaviour change is, the role of needs in social marketing, and the importance that social marketing places on focusing research on particular behaviours. It will then go on to outline what the data indicate are the most important ESC categories and therefore why this thesis focuses on large-engine cars, leisure flights and new durable products. Subsequently, it will summarise the main themes that can be

synthesised from the literature in terms of drivers and constraints to consumption of these specific behaviours.

Chapter Four draws together the realms of environmental psychology and social marketing by detailing the postmodern psycho-socio-cultural lens to consumption and human needs. Espoused differences between the two approaches will be explored and the theoretical assumptions underlying these differences analysed. Consequently, the role of a psycho-socio-cultural approach to consumption is put forward as providing a unifying base which demands that the role of social marketing be extended beyond meeting existing needs satisfaction, to include intervention in respect to people's psychological orientations and to proactively create new modes of need satisfaction. Chapter Four therefore provides the basis for the research design, where both psychological orientations and behaviour specific needs analysis are researched and analysed together to produce social marketing insights.

Chapter Five provides the details of the methodological approach and methods used in the research. Firstly, the role of Pragmatism as the epistemological approach used for the research design will be introduced. Utilising this approach, the reasons for using a two stage multi-method design, where qualitative research supported a subsequent quantitative research phase, will be presented. Additional details of the research design will be provided, including sample and implementation considerations for both phases. It will also consist of an overview of Global Action Plan and the EcoTeam's programme, which is the focus of Objective Three.

The results of the research are presented in Chapters Six and Seven. Chapter Six outlines the qualitative results. As the qualitative phase was carried out primarily to inform the items that should be used within the quantitative survey, this chapter is structured clearly around this goal. The quantitative results are presented in Chapter Seven. The quantitative results chapter is structured around the three objectives of this thesis, with the first part considering the psychological orientations and how these relate to consumption at both the aggregate and

behavioural level, as well considering relationships with socio-demographic variables. The second part of Chapter Seven focuses on the behavioural categories and considers the drivers and constraints to these, as well in relation to the socio-demographic and psychological variables. These are assessed in terms of their inter-relations and their relationship to consumption at the aggregate and behavioural level. The third part of Chapter Seven considers the differences and similarities between Global Action Plan participants and those of the general sample.

Finally, Chapter Eight will provide the discussions and conclusions to the thesis. It will draw out the key implications of the findings at both a theoretical level and in terms of the implications for social marketing interventions. It will thereby create the link between this introduction and the research that has been carried out. Limitations, recommendations for future research and the contribution made by this thesis will also be considered in the final chapter.

CHAPTER TWO

Psychological influences on environmentally-significant consumption

2 PSYCHOLOGICAL INFLUENCES ON ENVIRONMENTALLY-SIGNIFICANT CONSUMPTION

2.1 Introduction to the chapter

This chapter forms the first part of the literature review and focuses on the research relating to Objective One of this study, which is: To identify the key environmentally-significant psychological orientations and socio-demographics of higher-income householders and how these relate to a selection of ESC behaviours.

Environmental social science and specifically environmental psychology, provides a core area of research within the field of sustainable consumption. Research in this area includes identifying and testing the role of different psychological orientations in respect to environmentally relevant consumption. As such it provides a useful base of research to draw on when considering how best to design behavioural interventions for HIH consumption. However, there are limitations to past research in this area; research is often limited to the theoretical rather than being linked to behavioural intervention design options; it rarely considers a range of orientations in relation to each other and it is normally in relation to pro-environmental behaviours such as recycling, rather than environmentally-significant behaviours, such as car choice. Additionally, understanding the psychological orientation of those with higher incomes is rarely the explicit aim of research. However, the theoretical insights from this field provide a very useful basis which can be applied to the specific case of HIH.

Initially, the chapter will briefly introduce the role of environmental psychology and its perceived utility for sustainable consumption interventions by practitioners. This will be followed by a more detailed overview of four key psychological arenas which can be considered most relevant for influencing the ESC of HIH. These are: general values; specific values of materialism and environmental concern, and identity. The literature surrounding the potential influence of these psychological orientations on ESC will be presented, as well as any socio-demographic

relationships with the orientations. A particular focus on what is known about the relationship these psychological orientations have with income will be given, where possible.

2.2 Sustainable consumption and environmental psychology

Although a number of overviews to academic behaviour change theories in an environmental context exist, (Kollmus and Agyeman, 2002; Darnton, 2004), Jackson's 2005 paper provides perhaps the most comprehensive. This overview indicates that the most widely applied and relevant models of behavioural change are psychological. Environmental psychology is an established field that considers the interplay between humans and their environment. Researchers in this field have been particularly active in exploring how a variety of different psychological orientations influence environmentally relevant behaviour and consumption practices by individuals (e.g. Stern et al., 2000; Thøgersen & Ölander 2002; Gatersleben et al. 2005; De Groot and Steg, 2008; Schultz 2000; Kasser 2002). The research includes an emphasis on exploring the role of socio-demographics in structuring these orientations.

Psychological orientation research has been particularly popular with some practitioners, most notably the long established World Wildlife Fund who have actively worked with some academics to advance this area (Crompton, 2008; Crompton and Thøgersen, 2009a; Crompton and Kasser, 2009b; Crompton 2010). Those promoting the use of psychological orientation research argue that through emphasising or restraining particular psychological orientations, enduring and low environmental impact consumption will be fostered. This is because psychological orientations are seen to represent fundamental areas of beliefs, and therefore are expected to transcend specific behaviours (Crompton, 2008; DEA 2010). As such, by focusing on someone's environmentally relevant psychological orientation, for example, their values or identity, it is believed that a range of ESC behaviours are liable to be affected. Additionally, because these orientations are

foundational, any change made at this level is expected to be enduring (Crompton 2008; Crompton and Kasser, 2009).

Furthermore, there is evidence that some environmentally supportive and restraining orientations are polarised, in that the holding of one reduces the possibility of holding the other. This conflict is considered a further reason that certain orientations, such as altruism, must be promoted and at the same time others, such as materialism and feelings of relevant financial success must be discouraged (Crompton and Kasser, 2009).

When narrowing down the most important concepts for studying HIH, the approach taken here is to focus on those that are shown to be most important to environmental behaviour or which are likely to provide particularly important insights for HIH and their ESC. Within environmental psychology, a particular focus has been on general values (Ajzen & Fishbein 1977; Van Liere & Dunlap, 1980; Olsen 1981; Kantola, Syme & Campbell 1982; Schultz and Zelezny 1999, 2003; Schultz 2001; Thøgersen & Ölander 2002; Dietz et al. 1994; Dietz et al. 2005; De Groot and Steg, 2008; Gatersleben et al. 2009) and environmental concern, which can be considered a specific value (Franzen and Garling, 1999; Snelgar, 2006; Dunlap et al., 2000).

Materialism, which can also be seen as a specific value, although less commonly present in environmental psychology literature, has been advanced by some researchers (e.g. Richins and Dawson, 1992; Kasser 1995). Materialism is theoretically relevant to income, as a relationship may exist between the physical ability to consume in large quantities (through income) and the importance placed on such practices.

Finally, identity is a concept that reflects the totality of someone's view of themselves, and as such encompasses someone's values and yet is a distinct concept (Clayton and Opatow, 2003). Identity is known to be foundational to consumption, but is a topic only infrequently applied to sustainable consumption (Clayton and Opatow, 2003; Jackson, 2005). The question of how the identity of

being wealthy and the identity of being an environmentalist relate to each other and to ESC behaviour is of particular interest.

In summary, the four topics of general values, materialism and environmental concern (as specific values), and identity, are considered appropriate concepts for research into HH ESC. This chapter will introduce these concepts in more detail, outlining the relevant research of each in order to establish some general hypothesis and positions, and highlighting where research exists about those with higher incomes. The potential role of the socio-demographic variables of age, gender, education and household structure, in shaping the energy heavy behaviours and psychological variables will also be considered within the concept discussions. The chapter will conclude by introducing a conceptual diagram of the psychological orientations discussed.

2.3 Values

The idea that someone's values affect their behaviour is an important concept of behavioural research with a long history spanning many disciplines and dating back to Eighteenth Century economics (Dietz et al. 2005). Dietz and colleagues (2005) describe three main ways in which the term 'values' is used. Firstly, to represent the perceived worth of something, secondly, to describe an assessment of that worth and thirdly, to represent principles or standards of morality that are used to judge the state of the world and one's own and others behaviour. It is the third definition which situates values as a key antecedent to behaviour. One of the most renowned researchers on the role of values is Schwartz. He terms a value as: "a desirable transsituational goal varying in importance, which serves as a guiding principle in the life of a person or other social entity" (1992:21). According to De Groot and Steg (2008) this definition encompasses the key agreed components of a value which are; that values reflect beliefs about desirable end-states; that values transcend situations and are therefore fundamentally abstract; that values are used as a guide for "selecting or evaluating behaviour, people and events" and lastly that values are ordered, with those most relevant being activated in a specific situation (De Groot and Steg, 2008:331).

The fact that values are seen to motivate behaviour makes the concept specifically important to researching how to reduce the energy consumption of HH. Lord and Brown (2001), further emphasise the normative nature of values, drawing on a different definition by Schwartz (1992), which states that values are “applied to normative standards” (p.2). This implies that values are likely to be structured by their social, cultural and lifestyle settings.

Like the rational choice model, values research is generally situated as part of a range of theories known as expectancy-value, which are based on the premise that one’s behaviour is rooted in expectations about the outcomes of that behaviour and the importance (value or ‘utility’) of that behaviour (Feather, 1990; Jackson, 2005). However values research offers more sophisticated insights into behaviour than the rational choice model because intention to act is not assumed to be a direct conscious response to personal utility assessments, but mediated by more complex factors, such as normative contexts. Specifically, behaviour is judged to be heavily influenced by beliefs about the likely influence of the behaviour, a concept which was developed by Bandura under the banner of ‘self-efficacy’ (1986) and by Ajzen in his Theory of Planned Behaviour as Perceived Behavioural Control (1991). As well as influenced by more complex factors, values include factors of selflessness (Jackson 2005), such as concern for the lives of others or the desire to improve environmental conditions, either for biocentric reasons or as an indirect way of improving the lives of other humans. For this reason, although inherently part of an expectancy-value approach, a focus on values moves away from the rational model notion that outcomes are based on self-interest alone (Jackson, 2005) and it therefore promotes a perspective of people as citizens rather than consumers (Ojea and Loureiro, 2007).

However, as with other expectancy-value approaches, it is still assumed that values, via mediating factors, will result in an associated conscious intention to act by the individual and that as a result of these factors behaviour will occur that reflects them. Therefore the intention to act is seen as proximate to action (Olsen, 1981; Stern, 2000). For example, Figure 2.1 gives a diagrammatic representation

of Stern's interpretation of the influence of values on intention to act in an environmental context, which will be discussed further in the next section.

Figure 2.1 The theory of environmental concern



Source: Stern et al. 1995a

Figure 2.1 also indicates that varying levels of values, beliefs and attitudes exist, moving from universal values to more context specific orientations. Some use alternative descriptions, for example, delineating values into general values and specific values, each with different roles in guiding behaviour – general values having a more fundamental role (Lord and Brown, 2001; Gatersleben et al. 2005) and specific values likened to Stern et al's (Figure 2.1) general beliefs. Although these specific values are normally related to an object or domain, they are still judged to transcend action in relation to that domain, for example, environmental concern or materialism (Gatersleben et al., 2009), which will be discussed later.

2.3.1 The value-action gap

It has long been observed that there is an inconsistency between someone's values or moral reasoning and their action, otherwise known as 'not practicing what you preach' (Feather, 1990) or the value-action gap. A range of research has focused on the cause of this disparity, emphasising the complex ways that values and actions are related. Cognitive-development theorists such as Rest (1979) and Kohlberg and Candee (1984) have highlighted that failure to act can come from deficiency at any stage of the action process: from assessing consequences of action, determining the right course of action, deciding on the best course of action based on the various consequences and executing and implementing that action.

Others have stressed that reasoning is unlikely to be so linear and stress that social learning and reinforcement are critical (Brown and Herrnstein, 1975; Bandura, 1986). Feather (1990) summarises the complex influences on values and action. These include the influence of role models; the ability to regulate and monitor one's behaviour in relation to personal standards and social influences; past learning in social contexts and the capacity to discriminate situations and generalise past learning. The value-action gap is the subject of continued research and no definitive model has been developed (Kollmus and Agyeman, 2002; Barr, 2003). Values researchers have sought to emphasise that the weak relationships between values and action may be because values are mainly indirectly important via their influences on concern and attitudes (Thøgersen and Grunert-Beckmann, 1997). However, this argument is not straightforward as there is a large amount of evidence indicating a consistent gap between attitudes and action, otherwise known as the attitude-action gap (Hayes and Cone, 1977; Ajzen & Fishbein, 1977; Kohlenberg, Phillips and Proctor, 1976; Olsen, 1981; Kantola, Syme and Campbell, 1982),

2.3.2 The structure of values

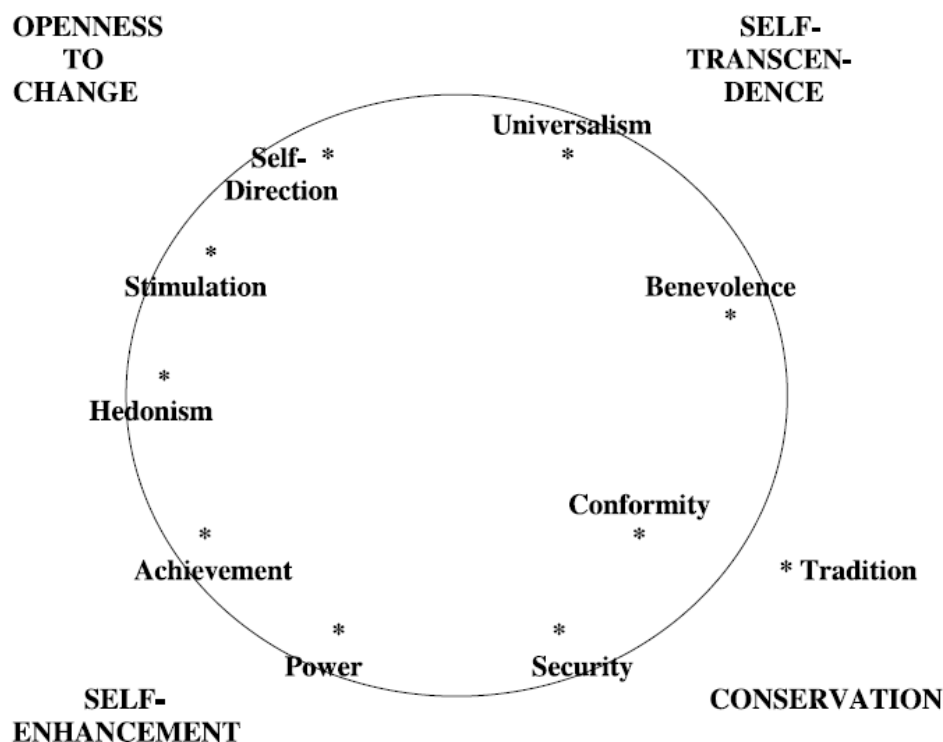
Although values may influence behaviour via complex processes, many have agreed that a set of universal general values is likely to exist and that these values do give an overall guidance for action (Rokeach 1973; Feather 1990; Schwartz 1992). These values are judged to be limited in number and often operate at the subconscious level (Thøgersen & Ölander 2002). Despite a broad acceptance that general values are universal, some have been keen to emphasise that even general values, although having a common meaning, will still have specific connotations depending on 'individual, group and cultural experiences' (Feather 1990:154), and that how values are developed and modified is heavily influenced by social contexts (Bandura 1986).

In order to establish what universal significant values might exist, Rokeach (1973) created a list of 18 terminal (outcomes) values and 18 instrumental (modes of operating) values. A shorter version of this is widely used in a marketing context

and referred to as the List of Values. Drawing from Rokeach's work and discarding the separation between the terminal and instrumental values, Schwartz developed a 56 item scale (1992,1994), known as the Schwartz Value Survey. In Schwartz's scale people were asked to rate, on a 9 point continuum, each value, based on the extent to which they were a 'guiding principle in one's life'.

From over 25,000 responses, across 44 countries and 97 samples, Schwartz has identified 10 clusters of value-based motivation: achievement, power, security, benevolence, universalism, self-direction, stimulation, hedonism, conformity and tradition. Furthermore, he has demonstrated that these could be plotted along two organising dimensions of values: self-transcendence (universalism and benevolence) versus self-enhancement (power and achievement), and conservation (tradition and conformity) versus openness to change (independence and self-direction) (Figure 2.2). These dimensions operate so that adherence to one set of values means resistance to holding its oppositional set of values.

Figure 2.2 The structuring of values



Source: Schwartz and Boehnke, 2004

Research has indicated that the self-transcendent versus self-enhancement dimension is particularly relevant to environmental behaviour and this will be explored in detail in below. One of the key sub-areas where values research has taken place is in the environmental field, and it is to research in this area and its relevance to investigating the ESC of HIH that this literature review now turns.

2.3.3 General values and environmental behaviour

Although various approaches to values as they relate to the environment have been studied, research has tended to focus on the idea that there are three values that are relevant to environmental behaviour: egoistic, altruistic and biospheric values. Stern, Dietz and Kalof (1993), in an adaptation of Schwartz's Norm-Activation model of altruism placed these three values as the foundational factors guiding behavioural intention towards the environment, via beliefs and attitudes (Figure 2.1). This later became known as the Value-Belief-Norm theory (Stern et al., 2000).

Stern et al. (1995b) noted that Schwartz's self-enhancement orientation was virtually indistinguishable from their conception of egoism and that universalism, within the self-transcendence orientation, was very similar the social-altruism, with items that also reflected biosphericism. Using and extending Schwartz's inventory, Stern and Dietz (1994) provided evidence that altruistic biospheric and egoistic values were independently important for environmental beliefs and intentions. They designated Schwartz's self-transcendent items as either altruistic or biospheric and all of the self-enhancement value items were deemed to measure egoism. De Groot and Steg (2008) point out that prior arguments existed for a separation of self-transcendent values, in relation to the environment into the two values of altruism and biosphericism; one that emphasises the human social consequences of behaviour and one that is concerned with the consequences for the environment itself. For example, in *Radical Ecology*, Merchant (1992) argues that the three ethical positions relevant to natural resource dilemmas are the homocentric (anthropocentric), the ecocentric and the egocentric. These three positions bare

close resemblance to the environmentally-significant values proposed. Whereas in Merchant's definition the egocentric position is based specifically on an ethic of resource utilisation to enhance one's own welfare, in values research egocentrism is about protection of resources, with individual gain the primary motivation.

Some studies have failed to show that biospheric and altruistic values operate distinctly (Bardi & Schwartz, 2003; Corraliza & Berenguer, 2000; McCarty & Shrum, 1994; Nordlund & Garvill, 2002; Stern & Dietz, 1994). However, the evidence of their separate roles has been mounting. Although Stern et al. (1995) found that biosphericism and altruism loaded onto the same factor, evidence that they operated separately was found when they were analysed in relation to how adverse consequences were assessed, a finding supported by Snelgar (2006). Snelgar also found evidence that biospheric values may be more usefully conceived of as comprising concern for plant life and concern for animal life.

As a result of four studies Schultz (2001) also provided strong evidence of the separate roles of altruistic, biospheric and environmental concern which he surmised as likely to be a direct result of adherence to the three values (Schultz 2001). Thøgersen and Grunert-Beckmann (1997) also found evidence for a biospheric value. Using confirmatory factor analysis De Groot and Steg (2008) also found three distinct values. This was based on a 12 item scale which drew from Stern et al.'s (1995) scale, and which was also applied successfully by Gatersleben et al. (2009). To improve the reliability of the egoism scale, a further item on ambition taken from Schwartz's achievement scale was added in a second study resulting in a 13 item scale.

2.3.3.1 Self-enhancement and self-transcendence orientations

The proposition that egoism is a self-enhancement orientation while biosphericism and altruism are self-transcendence orientations has been backed up by a range of research (Schultz and Zelezny, 1999, 2003; Schultz, 2001). Altruistic and biospheric values have been shown to both operate similarly, being positively

correlated to self-transcendence orientations and negatively correlated to self-enhancement orientations (Stern et al. 1995b; Schultz 2001).

As clarified by De Groot and Steg (2008), this is in line with social dilemma research which, distinguishes between pro-socials or co-operators and pro-selves or non-co-operators, where evidence in respect to ESC has shown that pro-socials are more likely to have pro-environmental beliefs and intentions than those who are pro-selves (Cameron, Brown, & Chapman, 1998; Gärling et al., 2003; Joireman et al., 2001; Joireman et al., 1997; Van Vugt et al., 1995). Schultz and Zelezny (2003) point out that although the values tend to cluster on continuums, individuals can hold varying degrees of value orientations (e.g. self-enhancement), and that the values are not mutually exclusive. This therefore supports the idea that someone can hold both self-enhancement and self-transcending values simultaneously.

Research tends to show that self-enhancing values, in terms of egoism, is a significantly weaker reported value in populations than self-transcendence, in terms of measures of biosphericism or altruism (Nordlund and Garville, 2002; De Groot and Steg, 2008; Gatersleben et al., 2009), or analysed in terms of universalism and benevolence (Thøgersen & Ölander, 2002). This suggests that even if egoism provides a negative force for environmental behaviour, this may not be exerting a large influence on the behaviour of populations.

Although theoretically biosphericism and egoism should be related, and egoism opposed to both these values, evidence of this through inter-correlations between the variables is sparse and sometimes inconsistent. Gatersleben et al. (2009) did find evidence that altruism is strongly positively related to biosphericism ($r=.46$, $p<.01$) as did De Groot and Steg (2008) ($r=.48$, $p <.01$). However, although De Groot and Steg (2008) found egoism to be negatively correlated to altruism ($r = -.24$, $p<.05$) they did not find a significant negative correlation between egoism and biosphericism. Furthermore, Gatersleben et al. (2009) did not report a significant negative correlation between egoism and either self-transcendence values.

2.3.3.2 Values and environmentally-significant consumption

Stern et al. (1995) state that all three values, and therefore both orientations, could give rise to pro-environmental behaviour, but the assessment of adverse consequences would vary depending on if the focus of the value was the environment, society or the individual. Biospheric orientated people would make assessments based on the benefits for nature, altruistic orientated people would base assessments on outcomes for other people and egoistic value orientated people would assess outcomes in relation to personal gains (Stern, 2000). The idea that egoism could give rise to pro-environmental behaviour is supported by the observation that ego strength is required in order to translate intention to act into action (Shifter and Ajzen, 1985), thereby providing a further potential connection between egoism and positive environmental action.

Despite this, egoistic values and concerns about the environment have, in general, not given rise to environmental behaviour (Schultz and Zelezny, 2003). Instead, although self-transcending values have been found to be positively related to environmental beliefs, intentions or sometimes behaviour (although often weakly), self-enhancing values are shown to negatively correlate (Stern, Dietz and Kalof, 1993; Stern & Dietz, 1994; Karp, 1996; Stern et al. 1995; Grunert & Juhl, 1995; Van Vugt et al., 1995; Thøgersen and Grunert-Beckmann, 1997; Schultz and Zelezny, 1998; Stern, Dietz, & Guagnano, 1998; Stern, Dietz, Abel, Guagnano and Kalof, 1999; Nordlund and Garvill 2002; Thøgersen & Ölander, 2002).

Schultz and Zelezny (2003) are quite clear that “Although theoretically meaningful and hypothesized, no published study to date has demonstrated a positive link between self-enhancement values and environmental behavior. In fact, the evidence to date is quite the contrary” (p.130).

Whereas much research cited above has focused on the influence of values on intentions or attitudes, only a relatively limited amount of research has considered the direct relationship between values and environmentally relevant action, for example Karp (1996), Schultz and Zelezny (1998), Bohler et al. (2006), Vringer

(2007) and Gatersleben et al. (2009). Although not assessing biosphericism, altruism and egoism specifically, Karp (1996) and Schultz and Zelezny (1998), found a positive relationship between self-enhancement values and pro-environmental behaviour and a negative relationship between behaviour and self-enhancement values. Thøgersen & Ölander (2002) found that only universalism, which included items from Schwartz's value survey on both biosphericism and altruism, was significantly, but weakly, connected with behaviour ($r = .12$, $p = <.01$) such as buying organic food and changing to energy saving light bulbs, although details of the specific value-behaviour correlations were not provided.

Others who have studied the effect of the three values on behaviour have found no correlation between the three general values and reported behaviour. Gatersleben et al. (2009) did not find any correlation with behaviour, although they did find correlations between values and the importance placed on certain energy consuming products. They found that those with egoistic tendencies were more likely to see higher energy consuming products as important, with lower energy consuming products more important to those with higher altruistic and biospheric values. Vringer et al. (2007) used data from a survey administered to 2304 households, using a measure of values combining the work of Rokeach (1973) and Schwartz and Bilsky (1987) and "did not find significant differences in the energy requirement of groups of households with different value patterns, taking into account the differences in the socio-economic situation of households" (p.553). Bohler et al.(2006:666), when considering influences on holiday destination found that "environmental values have no influence on travel behavior". For some, the weak results are because the importance of values should be judged primarily via their relationships with intermediary constructs such as specific values, attitudes or personal norms (Grunert, 1993; McCarty & Shrum, 1994; Stern et al., 1995; Thøgersen and Grunert-Beckmann, 1997). For others, it is because the connection between the value and the behaviour is not salient in individual's minds (Bohler et al., 2006).

It is notable that the research available tends to be concerned with atypical pro-environmental behaviour, in other words behaviour that tends to be symbolically

and overtly environmental, therefore greatly increasing the likelihood that people will respond in a socially desirable way and in a way that provides coherence between their expressed values and their behaviour. Some research has approached the issues of values and behaviour in a way that more subtly gathers energy information and combines the energy usage of different behaviours to form one score (e.g. Gatersleben et al. 2002). If environmentally-significant normative ESC was considered, in other words behaviour that is generally known to be bad for the environment but was also generally socially acceptable, and additionally references to the environment were minimised, it is possible the relationship between values and action would be even weaker and a more accurate picture of how values might influence behaviour would be gained.

2.3.3.3 Antecedents to environmentally-significant values

As income is not often included in research on values, there are only a few indications about the likely value orientations of those with higher-incomes. As HH, in general, consume in more environmentally destructive ways than those with lower incomes (as outlined in Chapter One), and if values are connected to behaviour, then it would be expected that those with higher-incomes would have lower levels of environmental values than others. However, the literature indicates that in fact those with higher incomes may have higher environmental values, indicating a large value-action gap. Stern (2000) suggests income is positively related to environmental citizenship and environmental activism, and Cowe & Williams (2001) relate income to ethical based consumption. As such, Darnton (2004) concludes that income is likely to be positively related to pro-environmental values.

It has been found that those with higher social grades and income believe recycling is more important and show higher levels of understanding of concepts such as 'Sustainable Development' (Bibbings, 2003). Someone's socio-economic level has also been found to be positively related to recycling levels, and consumption of ethical products such as organic food and energy-saving light bulbs (DEFRA and ONS, 2002). Additionally, a UNEP survey of 700 consumers worldwide concluded that higher-income groups were particularly likely to support programmes aimed at

changing their consumption to be less environmentally damaging (Bentley, 2000). This evidence, combined with the known higher energy use of HIH, suggests that a value-action gap is likely to be significant for HIH.

The idea that environmental values and wealth are positively connected is supported by media and public claims that environmentalism is a wealthy person's activity, which may also be deeply related to the notion of conservation being a rich, white man's concern. This heuristic connection between wealth and environmental values can be seen to draw from a number of key concepts. Firstly, Maslow's hierarchy of needs (1943) indicates that because needs are fulfilled in a hierarchical fashion people will move from a focus on the material to a focus on the spiritual and non-material. As incomes rise, higher order needs such as environmentalism can therefore be given attention. Secondly, Inglehart (1990) indicated that Western society has shifted politically from a materialist perspective, where the focus is on fighting rising prices and keeping order, to post-materialism, where freedom of speech and participation in government decision making is most valued. Thirdly, the concept of environmental Kuznet curves (EKC) claims that there is an inverse-U relationship between per-capita income and environmental pollutants, where pollution in countries increases up to a certain income level and then decreases (Grossman and Krueger, 1993; Selden and Song, 1994; Panayotou, 1997) (see Chapter One for more details). Additionally, a distinct area of economic research on 'willingness to pay' has resulted in studies which show that income has a significant effect on someone's willingness to pay for environmental services and this has been theoretically connected to values (Ready et al., 2002 Ojea and Loureiro, 2007). Although this kind of research is contentious, and in the case of EKC fiercely disputed (see Chapter One), there is more evidence to suggest that HIH will tend to hold environmental values.

A small body of research into the antecedents of values has indicated that age and gender may also be influential in determining values. Some have reported that biosphericism, altruism and egoism are all positively related to women (Stern, Dietz, & Kalof, 1993; Schultz, 2001). Others have reported alternative findings. Gatersleben et al.'s (2009) study of a cross section of householders found that

women were significantly more likely to be altruistic and men were significantly more likely to be egoistic. The study by Swami et al. (2010) based in the Greater London area, indicated that being female was positively and significantly correlated to both altruism ($r = -.22, p < .01$) and egoism ($r = -.14, p < .05$), but not biosphericism. In terms of age, Gatersleben et al. found that older people were significantly less likely to be egoistic, whereas Swami et al. (2010) found that younger people were more altruistic ($r = -.18, p < .01$) and older people were more biospheric in their values ($r = .11$), although this was not significant.

As mentioned in the previous section, values can be distinguished as general values and specific values (e.g. Gatersleben et al., 2009). Two specific values that are shown to be important to environmental behaviour are environmental concern and materialism.

2.3.4 Specific values

2.3.4.1 Environmental concern

Environmental concern has been interpreted in various ways and on occasion is used interchangeably with values (Franzen and Garling, 1999). Here, it will be treated as a specific value that relates to anxiety about issues facing the natural world. Environmental concern is considered important as it motivates behaviour, or behavioural intentions, to mitigate the perceived negative issues. Environmental concern is often researched in the context of values, because the type of environmental concern expressed has been shown to relate directly to the type of general values someone holds, and additionally, environmental concern is seen to mediate the space between values and action (Snelgar, 2006). Stern et al. (1993, 1995) and Schultz (2000) have both developed scales to measure environmental concern about adverse consequences which are directly related to egoistic, altruistic and biospheric values. However, the most common way to measure environmental concern is the New Environmental Paradigm (NEP) which was developed by Dunlap and colleagues (1978) and which they have since updated (2000). It was created in the 1970's to measure the extent to which someone conforms to the Dominant Social Paradigm or instead the NEP, where people

adhere to the view that there are limits to growth, that we are upsetting the balance of nature and we do not have a right to dominate nature (Dunlap et al., 2000). Although originally conceived in this way it has been used in a variety of contexts and a number of distinct factors have been drawn from the scale leading to conclusions that the NEP may be multi-dimensional. This is something that was not intended and which Dunlap and colleagues sought to redress in their revised scale.

Although the NEP is the standard way of measuring environmental concern it has a number of limitations when seeking to address the ESC of HIH. Firstly, its wording is likely to invoke SDR. Provocative items include “Mankind is severely abusing the environment” and “Humankind was created to rule over the rest of nature”. Secondly, with 12 items it is lengthy when combined with a number of other scales. Thirdly, it does not measure how important concern for the environment is, relative to concern for other issues. This is important because someone may be very concerned about the environment, but even more concerned about tax or inflation and therefore this is likely to dominate behaviour. Fourthly, and most importantly, the NEP measures, in a uni-dimensional way, whether someone is concerned about the environment due to concern about environmental outcomes. The wording of the items therefore relates quite specifically to concern about nature and the natural environment and can be seen to present a ‘human versus nature’ position with questions such as “Plants and animals have as much right to exist as humans” and “humans have the right to modify the natural environment to suit their needs”. Therefore it can be judged to lean towards a biospheric value orientation where the intrinsic value of nature is implicit.

There are other environmental concerns that could be considered distinct from concern for the natural environment. Specifically, concern about climate change can be seen as a topic which has developed separately from environmental protection per se., and overshadows broader sustainability issues as the prime focus of the media, politics and behavioural interventions. Therefore people may have specific climate change concerns guiding their behaviour, and this could be for egoistic or altruistic reasons, and not based on a biospheric concern for plants and animals at all. An additional topic now strongly related to environmentalism is

that of energy issues, which reflects specific resource concerns (Gatersleben et al. 2009). This in turn relates to issues such as the peaking of conventional oil in 2006 (IEA, 2008) and general energy security which are considered likely to affect individuals, society and poorer people and in a more direct and inconclusive way, the natural environment - as people's agenda moves swiftly to short-term survival and away from longer terms sustainability and cooperation as the energy crisis hits (Hurth, 2008). The explicit focus on the dual topics of climate change and peak oil of the Transition Town movement, a major worldwide grassroots environmental movement, indicate the extent to which these two issues have become associated with environmental concern (Hopkins, 2008). One simple and subtle way to test people's fragmented, relative level of concern for an issue such as the environment is the approach taken by Standard Eurobarometer (European Commission, 2007), which presents people with a list of topics that may be of concern to them and asks them to identify the two about which they are most concerned.

2.3.4.1.1 Environmental concern and environmentally-significant consumption

Fransson and Garling's 1999 meta-analysis of environmental concern suggests that the relationship that exists between concern and behaviour has "rarely been a direct aim of previous research" (p.372). However, some studies have indicated that, as would be expected, a positive relationship exists between environmental concern and environmental behaviour (e.g. Meinhold & Malkus, 2005; Roberts et al., 1997). Dietz et al. found that environmental concern was significantly related to the willingness to sacrifice for the environment ($r=.10$, $p<.01$) and more strongly to the engagement in green consumer behaviour ($r=.19$, $p<.01$). Gatersleben et al. found that environmental concern was significantly positively related to the intention to partake in a range of pro-environmental behaviours, from turning down heating ($r=.22$, $p<.01$) to eating less meat ($r=.20$, $p<.01$). Other research suggests that the connection is more substantial for low-cost behaviours, in both effort and monetary terms, than for high cost behaviours (Stern, 1992). These studies are predominately about pro-environmental behaviours however. Where research has been performed in respect to ESC, a favourable impact of

environmental concern has not been found, for example, in the case of holiday destination choice (Bohler et al., 2006) and energy use (Gatersleben et al., 2009).

2.3.4.1.2 Antecedents to environmental concern

Fransson and Garling (1999) state that the relationship between income and environmental concern has been only infrequently investigated. Xiao (2004:146) states that “social class or socio-economic status measured in terms of income and/or occupational prestige”, is sometimes hypothesized to be positively related to levels of environmental concern in the literature (e.g., Mohai and Twight, 1985; Schahn and Holzer, 1990). The perception that wealth and environmental concern are linked (Diekmann and Franzen, 1999) is often based on national income figures and related to the arguments set out around environmental values in Section 2.2.3 above, particularly, the idea that post-materialistic needs can be pursued by those with more money (Fransson and Garling, 1999). Dunlap et al. (1993) recognise the perception of a link between income and environmental concern but suggest that the data are inconsistent and rarely significant. Furthermore, they provide evidence that environmental concern was prevalent in wealthy and poorer countries alike. Dietz et al. (1994) also suggest that environmental concern is only weakly and rarely significantly related to income. Others still suggest that income is negatively correlated with measures of environmental concern (Dunlap and Mertig, 1994).

Regarding other socio-demographic variables' influence on environmental concern, Dietz et al. (1994), recognising a lack of research in this area, produced a paper reviewing the dispersed evidence and producing new data. They suggest that age and age cohort are the most widely reported and consistent predictors of environmental concern, with gender also important but less consistently. Their data indicated that younger people were less environmentally concerned (expressed as awareness of environmental consequence) ($r = -.28$, $p < .05$), with older people more likely to engage in environmental petition signing. They also found females were more environmentally concerned ($r = .56$, $p < .01$). Fransson and Garling cite a number of studies where younger people were found to be more concerned about the environment (e.g. Van Liere and Dunlap, 1981; Nord et al., 1998; Howell and Laska, 1992). This is hypothesised to relate to the reduced threat environmental

issues pose to younger people, although they note with media attention about the environment increasing, this effect may become eroded over time.

Women are generally found to be more environmentally concerned than men, which may be mediated by parental responsibilities, ethical socialisation or labour force roles (Dietz et al. 1994). Although Fransson and Garling (1999) note this relationship is under-investigated and results are not consistent. Education had no effect on environmental concern. However, in other studies a positive relationship between education and environmental concern has been found (Van Liere & Dunlap, 1980; Black et al., 1985; Nord et al., 1998). In terms of relationships with other psychological constructs, Gatersleben et al. (2009) found a strong correlation between environmental concern and biosphericism ($r=.46$, $p<.01$), a positive but insignificant relationship with altruism ($r=.14$, ns) and a significant negative relationship with egoism ($r=-.17$, $p<.05$).

2.3.4.2 Materialism

Richins and Dawson (1992) classify materialism as a value, and here it will be interpreted as a specific value, after Gatersleben et al. (2009). Alluding specifically to the value basis of materialism, Richins describes it as “the importance ascribed to the ownership and acquisition of material goods in achieving major life goals or desired states” (Richins, 2004:210). Materialistic values represent the extent to which physical possessions play a central role in someone’s life (Belk, 1985). As materialists place the possessions of goods as central to their lives this translates into higher material consumption for those with higher materialistic values (Richins and Dawson, 1992).

From a psycho-socio-cultural perspective, the limitation of the materialism concept to physical goods, rather than encompassing services and experiences, presents some conceptual difficulties. Theories of materialism include recognition of the importance of the symbolic qualities of material consumption in driving materialism. This is operationalised in the scales used, for example, Richin and Dawson’s scale (1992) includes the item ‘The things I own say a lot about how well I am doing in life’. However, the important symbolic properties of consumption are not limited to

those embodied in physical goods (Vargo and Lusch, 2004; Fuat Firat and Dholakia, 2006; Peñaloza and Venkatesh, 2006), the symbolic properties of an experience or a service, which will indirectly require high levels of material input (Jackson and Marks, 1999), may also result in that consumption being central life. The material properties of a good is only different to non-material properties or goods in that symbolic meaning is transmitted in a more visual way rather than verbally or by other means. By restricting materialism to physical goods alone, it is possible that the influence of materialism on other consumption practices will be missed.

Richins and Dawson (1992) developed a now widely employed scale, interpreting materialism as a value and encompassing three concepts of materialism as a sign of success, as centrally important and as a route to happiness. External validity was found for this scale when it was tested against Schwartz's value survey and it was found to be strongly, positively related to self-enhancement values such as power and achievement and negatively associated with self-transcendence values. This was further supported by Kilbourne et al.'s study (2005).

Although materialism's connection to high consumption levels has obvious implications for sustainable consumption research, most of the research into materialism has been taken in the fields of anthropology and sociology and in the context of concerns about the effects of consumerism. Therefore research has tended to focus around the negative effects of materialistic values on quality of life (Douglas and Isherwood, 1979; Csikszentmihalyi and Rochberg-Halton, 1981; Belk, 1985; Campbell, 1987; O'Guinn and Faber, 1989; Dawson and Bamossy, 1991; Richins and Dawson, 1992; Richins and Rudmin, 1994; Kasser et al., 1995; Ger and Belk, 1996; LaBarbera and Gurhan, 1997; Rindfleisch et al., 1997).

Results indicate that materialism tends to be connected with low levels of self-esteem, compulsive spending, envy and low levels of generosity. Kasser (2002) found that materialistic people see luxury goods as more important than non-materialists and Richins (1994) reported more values placed on assets, expensive goods, appearance, and transport related possessions. These theoretical and

empirical findings make an important indirect contribution to understanding the effects of consumerist cultures on social and environmental sustainability, indicating that materialism should be a strong driver for ESC. The dominance of the value, and the strong indication it is a self-enhancing value, means it should be very difficult for someone to hold strong materialistic values and be environmentally concerned or hold biospheric or altruistic values. Illustrating the weak links between the sociology of consumption field and the sustainable consumption field, only a few pieces of research have explicitly investigated these kinds of assumptions (e.g. Banerjee and McKeage, 1994; Gatersleben et al., 2009).

2.3.4.2.1 Materialism and environmentally-significant consumption

Kasser's 2002 book *'The High Price of Materialism'*, summarises the limited research investigating materialism and environmental behaviour and orientations. He notes Saunders and Munro's study (2000), which reported that those with strong materialistic values also had negative attitudes to the environment, low levels of 'love for living things' and engaged in only a few pro-environmental behaviours. Brown and Kasser (2005) also found that materialism was significantly negatively related to a measure of environmentally relevant behaviour; both pro-environmental behaviours, such as riding a bicycle and recycling, as well as an individual's ecological footprint ($r = -0.21$, $p = <.01$).

Richins and Dawson (1992) found a significant negative relationship between materialism and ecological awareness (recycling and contributing to environmental organisations) ($r = -.24$, $p = <.01$) and material simplicity (buying used goods and riding bicycles instead of cars) ($r = -.18$, $p = <.01$). Furthermore, Sheldon and McGregor (2000) discovered that materialists were more likely to engage in decision making that would result in a 'tragedy of the commons' compared to those with lower materialistic scores.

Further evidence is provided by Good (2007), who found that materialism mediates the positive relationship between television viewing and low levels of environmental concern. Gatersleben et al. (2009) utilised Richins' popular Materialism Values Scale (MVS) with the addition of Belk's items on non-generosity. They found that

whereas general values and environmental concern were not related to particular consumption activities, for men materialism was connected to energy significant activities such as eating meat and playing computer games for men. For women it was associated with shopping for fun. Materialism was also associated with consumption of high-tech possessions for both genders ($r=.39$, $p<.01$) and negatively associated with low-tech objects ($r=-.20$, $p<.01$) as well as certain environmental technologies such as buying solar panels and using compost bins (Gatersleben et al. 2009). Banerjee and McKeage's (1994) study of college students also found a slight but significant negative relationship between reported pro-environmental behaviour and materialism ($r=-.15$, $p<.01$).

2.3.4.2.2 Antecedents of materialism

Underpinning Richins and Dawson's MVS (1992) is the assumption that materialistic people value the "means to acquire possessions" (p.308) more than low materialists. This is a notion supported by Hirschman when considering materialism and immortality (1990:40), where she states: "It is probably not surprising that an ideology celebrating the acquisition of wealth and possessions primarily seeks immortality through material means. What is puzzling is that social scientists in general and consumer researchers in particular have been reluctant to recognize this as a central motivation driving exceptional personal achievement and the oft-resulting accumulation of wealth and possessions".

The link between aspiration for monetary wealth and materialism is further underlined by Kasser, who equates valuing wealth with materialism, when he indicates research that links materialism with low environmentally-significant values (2002). Richins and Dawson found evidence to support this, with high scoring materialists wanting their income to be about 50% higher (1992). This would suggest that materialists are more likely to make career and other decisions that would enhance their available income and therefore the opportunity to possess (Cherrington, 1980; Schor, 1991). In further support of the positive relationship between income and materialism, Ger and Belk's research suggests that people from more affluent countries are more materialistic than those from poorer countries (1996).

Others, however, have found no correlation. Richin and Dawson (1992) found no relationship between income and materialism and nor did Watson (2003), who specifically set out to assess aspects of income and spending patterns in relation to materialism. Others still have shown that in fact low income groups are more materialistic. Kasser et al. (1995) reported that materialism was more prevalent in teenagers from more financially deprived backgrounds. This would seem to give support to Inglehart's post-materialism proposition (1990; 1995). Using a Maslovian hierarchical approach to needs, Inglehart sees materialism as a lower order need (Inglehart, 1990). However, in general the support for this proposition is weak (Dunlap and York 2008).

The mixed evidence suggests the proposition that H1H may be more materialistic requires further research. Additionally, the implication laid out in Section 2.2.4.1.2 that H1H may also be more environmentally concerned, bring up the potential that both self-transcending and self-enhancing values may be held simultaneously by H1H. This, based on the literature discussed in Section 2.2.3.1, will likely result in psychological conflict.

Research also exists to test the relationships with other socio-demographic variables and between materialism and other psychological orientations. In relation to values, Gatersleben et al. (2009) found that materialism was negatively related to the self-enhancement values of altruism ($r = -.22$, $p < .01$) and biosphericism (although not significantly, $r = -.14$, ns) and environmental concern, ($r = -.20$, $p < .01$). It was also strongly related to egoism ($r = .50$, $p < .01$). Although most people held either materialism or environmental concern, 23% were both materialistic and environmentally concerned simultaneously. Gatersleben et al. also found that materialism was related to age and gender, with males and younger people being more materialistic and females and older people less likely to be materialistic. Banerjee and McKeage (1994) on the other hand found no gender differences. They used a bespoke measurement of environmentalism and found a significant negative relationship with materialism, similar to Gatersleben et al. ($r = -.20$, $p < .01$).

As well as general and specific values, other psychological orientations are likely to provide important influences over ESC of HH. As the next chapter will outline, someone's self concept or 'identity' is one particular psychological factor that has been shown to be central to consumption decisions. Additionally, via the changing dynamics of identity creation and its relationship with consumption, as outlined in Chapter Four, the importance of identity to consumption can be seen to have increased in a post-modern context.

2.4 Identity

The concept of identity has been highlighted as a critical, yet often overlooked, avenue of analysis for sustainable consumption research (Clayton and Opatow, 2003; Jackson, 2005). Identity or self-concept has been diversely interpreted across a number of disciplines (Gleason, 1983; Stryker and Burke, 2000), and therefore there is still limited consensus about the term (Clayton and Opatow, 2003). However, Sirgy (1982) suggested that a common definition is the "totality of the individual's thoughts and feelings having reference to himself as an object" (Rosenberg, 1979:7). Using the totalising definition above, identity can be interpreted as encompassing and underpinning values (e.g. Schultz 2001; Dietz et al. 2005) with the two concepts demonstrating "mutually reinforcing effects on motivation" (Lord and Brown, 2001:136). This has been empirically supported by Clayton (2003) who showed that the environmental identity was a significant predictor of pro-environmental behaviour even when values were held constant, but this was not replicated if identity was held constant. It is therefore useful to consider identity as a related, yet distinct influence on behaviour compared to values.

Although identity is rarely considered empirically within the sustainable consumption field (see Hurth, 2010 as an example from which some of the following analysis has been drawn), it is argued here, in support of Jackson's position (2005), that it is important to consider identity as a concept in more depth. This is because research shows that it is likely to exert a specific influence on

consumption behaviour and this may be particularly relevant for the ESC of HH. Empirical evidence of this has been found in studies indicating, sometimes against expectations, that identity is an independent predictor of consumer behaviour (Sparks and Shepard, 1992; Sparks and Guthrie, 1998). There are various ways of considering the concept of identity. One of the most important is seeing identity as a key means by which agency and structure are mediated (Giddens, 1991; Stryker and Burke, 2000), underlining identity as a critical concept when using a psycho-socio-cultural approach. According to 'identity theory' and variously drawing from Mead's work on symbolic interactionism, a person's identity is structurally shaped and reinforced by shared meaning that is derived from the symbolic in social and cultural interaction. As will be discussed in Chapter Four, for postmodern theorists, consumption has come to play a central role as the primary conveyor of the meaning through which our identities are negotiated (Csikszentmihalyi and Rochberg-Halton, 1981; Beck, 1992; Featherstone, 1991; Giddens, 1991).

Identities operate in complex yet structured ways. From an identity theory perspective, the self is a reflection of society, and both are viewed as multifaceted and diverse, yet patterned, and with an inclination to reproduce themselves (Hogg et al., 1995). More specifically, the self is organized into differentiated, multiple and sometimes contradictory identities. Drawing from William James's work (1890), identity theory posits that, as people interact in a range of groups, people will hold as many different identities as there are distinct groups of significance to them. Hogg et al. (1995:256) summarise these identities as "self-conceptions, self-reference cognitions, or self-definitions that people apply to themselves as a consequence of the structural role positions they occupy, and through a process of labelling or self-definitions as a member of a particular social category".

Significantly, these identities are not equal. Identities are organized hierarchically in one's self-concept. The ultimate aim of ordering and patterning is to maintain a sense of self-congruence, a goal facilitated by long term themes and short term life projects (Mick and Buhl, 1992). Those identities towards the top of the hierarchy are more likely and more often invoked in situations to guide action to achieve self-

congruence, and therefore are more self-defining than others towards the bottom of the hierarchy (Hogg et al., 1995).

Because, it is argued, someone will hold a range of enduring yet dynamic identities, they vie for position and are therefore “potential competitors in producing behavioural choices” (Stryker, 2000: 21). Different situations will invoke different behaviours depending on which identity is most salient in that situation. How high up the hierarchy an identity is in general (and therefore how often it guides behaviour overall) depends on the commitment to the identity as part of the long term ideal self. According to McCall and Simmons (1978), relative position depends on the support given by the person and others who affirm an identity through social interaction, how much someone has committed or invested in it and the internal and external gratification associated with it. Related to this, a primary function of identity is to maintain self-esteem, which is monitored reflexively by interpretation of self, through the outcomes of interaction with others (Sirgy, 1982).

On the question of what shapes the ESC of H1H the two most significant identities likely to exert an influence are someone who sees themselves as caring about the environment and someone who sees themselves as financially successful. These are termed here as the environmentalist and affluent identities respectively.

2.4.1 The affluent identity

For those with higher-incomes, the identity of being someone who is relatively financially successful is likely to be held. This may be merely by virtue of the fact, but may also be related to hereditary wealth, which may express itself in deeply held family identities. It may also be as a result of a long held ideal identity that has been pursued by the individual. The affluent identity is not one that has been specifically defined in the literature and, as forms of commonly held identities are personally subjective and socially and culturally structured, it is impossible to classify one version of any one identity. However, in terms of what an ‘affluent identity’ might mean, certain generalisations can be drawn from pre-existing research about the key features or stereotypes of what it means to be ‘affluent’ or a

'relatively wealthy person' in a given setting. These stereotypes are significant because the heuristic measures by which people judge others are likely to be the same ones that they use to create their own self-perception (Bem, 1972). This leads to what is known as self-stereotyping, where people perceive themselves in line with the stereotypes of a group and behave in line with salient attributes of that group (Biernat et al., 1996)

Research indicates that the affluent identity is extremely salient, elicits wide support from general society and is consequently connected with high levels of gratification and self-esteem. Mitchell and Mickel (1999:569), state that: "symbolically, money is often associated with four of the most important symbolic attributes humans strive for: (1) achievement and recognition, (2) status and respect, (3) freedom and control, and (4) power". Hirschman (1990) concludes that society tends to link affluence to positive notions of success and entrepreneurial achievement. Similarly, Dittmar and Pepper, in their 1994 study of the impact of material wealth on perceived identities, specifically isolate wealth as being synonymous with intelligence, hard work, success and having a desirable lifestyle. Furthermore, Dittmar believes that the affluence is strongly connected to commonly held notions of the 'good life' (Dittmar, 2008). Similarly, Darnton (2004) points out that 'quality of life' is often interpreted as meaning 'level of financial wealth'.

Empirical studies have shown that people distinctly connect financial wealth to attractive personality characteristics such as individuality and uniqueness (Furby, 1980), higher worth or value as a person (Marshall, 1982; Poggi, 1983), greater societal contribution (Eisenstadt, 1968; Robertson, 1935) and sexual prowess (Low, 2000). One study showed that, although not all affluent identity traits are positive, those people displaying affluence had the consistent and pronounced result of being perceived as successful, sophisticated and displaying a lifestyle that was both attractive and desired (Christopher and Schlenker, 2000).

Anthropological research shows that energy, wealth and power have been highly symbolically connected in past societies. Power can be seen as deriving from the control of resources and more specifically deriving "first from energy and second

from the ability to direct that energy” (Adams 1975 in Hendon 1991:894). Furthermore, the use of socio-culturally specific consumption practices to symbolise the control over energy and resources has been well documented by Trigger (1990).

There is not only a deep connection between affluence and environmentally unfriendly consumption, but at a value-based level, affluence is often linked, via scientific prowess, to the ability (and duty) to control the environment (Hirschman 1990; Dittmar et al. 1989) and the capacity to be wasteful (Veblen, 1899). Furby (1980) concludes that direct control of the physical environment is a key attribute of wealth. The income-energy symbolic connection persists in current society, as is vividly described in the book ‘Richistan’ (Frank, 2007) which documents the increasingly ESC of a growing affluent class across a range of consumption practices.

Under definitions of role identities used by identity theory, it is possible to describe the affluent identity as more of a social attribute, similar to gender or race, than a role (Hogg et al., 1995), thereby exerting only an indirect effect on identity (Stryker and Serpe, 1982), for example through the function wealth plays in enabling the consumption practices necessary for maintaining congruence of other identities. However, for many, especially those with strong commitment to being affluent, it is likely to exert an independent role as an identity, because, as described above, the notion of being ‘an affluent person’ goes beyond the application of that wealth and directly influences affective and self-esteem outcomes.

The likelihood of affluence operating as a distinct identity is reinforced by the fact that many companies specifically target the affluent identity, for example, with high-end supermarket food brands. Although affluence can be considered a distinct identity, it is difficult to separate from a relative ‘high-status identity’ because of the intricate connection between affluence and its role in structuring and signifying social status (Beck, 1992; Bourdieu, 1984; Hirschman, 1990).

The fact that the 'affluent' identity is fundamentally about relatively high levels of wealth means that it is likely to be held by many, although not necessarily all HH. The social salience of the affluent identity means that where it is held it is likely to sit towards the top of a person's identity hierarchy, meaning it will often dominate decisions in a range of circumstances. Furthermore, as the affluent identity is connected with high resource use and domination over nature, it follows that it would conflict with, and potentially repress, any environmentalist identity that may be held.

2.4.2 The environmentalist identity

Although the 'environmentalist identity' is one referred to within environmental social science literature, there is no one definition that dominates (Light, 2000; Clayton and Opatow, 2003). As Dunlap and McCright (2008:1045) express, "Speculation abounds on topics such as what it means to be an environmentalist, the sources of identification with the environment, and how various forms of environmental identity influence people's behavior". Furthermore: "Answering these questions is made difficult by the fact that one finds multiple, competing, and typically ambiguous meanings of environmental identity in the literature". Clayton (2003), for example, considers it to be about connection with nature, whereas Dunlap and McCright have interpreted it as affiliation to a social movement (2008).

In contrast to the salient and desirable affluent identity, which is linked to dominance of nature and technological mastery, the environmentalist identity is stereotypically linked to affective qualities, which connect humans to nature and can tend to reject technological advances. It can also be observed to be related to the rejection of wealth, 'hard work' (in the productivist sense) and traditional consumptive notions of 'the good life'. Influenced by historical and publicly held representations of environmentalists, these salient aspects of the environmentalist identity are often viewed negatively (Ger et al., 1998).

A recent article in a prominent British broadsheet newspaper about the Green Party (Phibbs, 2008) describes an important culturally held stereotypical view of

environmentalists: the author talks of the “tendency to wallow in hairshirt dreariness. Its willingness to blame the planet’s woes on humanity borders on self-loathing. Some members revel in demanding a constrained human existence – rather in the manner of Opus Dei carrying out self-flagellation. They give the impression that if some technological breakthrough were found that stopped global warming and meant we could all carry on consuming with cheerful abandon, they would be nonplussed” (p.1).

Supporting social identity theory, which outlines the tendency to reject or avoid ‘out-groups’ (Tajfel, 1984), evidence of the negative view of ‘environmentalists’ was outlined in a study by Barr and colleagues, where a focus group participant stated ‘I feel really dodgy saying you’re an environmentalist, sort of like you’re Swampy and his mates’ (Barr et al., 2006:8). Swampy being a dreadlocked anti-road activist who rose to fame and commonly represented the environmentalist identity in the 1990s.

Not all aspects of the environmentalist identity are negative or opposed to the dominant form of the affluent identity. For example, the symbolic connection between wealth and ‘eco-friendliness’ can be increasingly observed, with Fashion magazines *Vogue* and *Tatler*, having published environmental special issues, websites such as greenaffluentlifestyles.com and greenchic.com being created, and the universal price premium of organic food. It has been argued above that the differences between the identities are stark and therefore although the examples here do not amount to a merging of the affluent and environmentalist identities, they do provide an indication of some level of highly visible symbolic connection between them.

2.4.3 Conflicts between the identities

Utilising the meta-orientations introduced by Schwartz (1999) when analysing values, it would be expected that the environmentalist identity would operate as a self-transcendence orientation and would exert a constraining influence over energy consumption and the affluent identity would be expected to be a self-

enhancement orientation which exacerbates energy consumption. These identities are therefore likely to be related to general and specific values that are orientated in the same way.

As opposing orientations, it would be expected that these two conflicting identities would not be easily held simultaneously, even if they are hierarchically ordered. This may mean that the affluent identity is threatened by the environmentalist identity, or vice versa, resulting in avoidance or negative stereotyping (Breakwell, 1986). This lack of ease would be expected to be translated into perplexity over consumption decisions where low and high-energy consuming practices represent the different identities. From an identity theory perspective, the salience of the affluent identity in society, and the social rewards it brings, compared with the environmentalist identity, will mean that for those who hold both identities, the affluent identity is likely to dominate in a majority of situations. This is likely to be the case unless there is a very strong commitment to the environmentalist identity: for example, those who fall into the category of 'ethical hardliners' (Niinimäki, 2010). For those who do not yet hold an environmentalist identity, there are likely to be significant identity barriers to overcome in order to reconcile holding the two identities simultaneously.

Theoretically, it would seem that there is a high likelihood of identity conflict for HH where they feel that they are both financially successful people and environmentalists. As expressed earlier, high adherence to affluent identities is expected, and at the same time as those with higher-incomes have been found to frequently demonstrate high environmental values and concern, it would follow that they would also feel they are environmentalists. However, the data supporting this are not consistent. Although environmental citizenship has been found to relate positively to income, environmental activism has been found to be significantly negatively related to income (Stern, 2000).

2.4.4 Measuring identity

A number of ways of measuring the environmentalist identity have been used, which could be adapted for the affluent identity. Self-classification through one or two items has been employed, either through a simple agreement rating such as 'I am an environmentalist' or, for example, the two item measure of environmental identity employed by Mayer and Frantz (2005): 'Environmental concerns outweigh all other concerns in my life' and 'I would call myself an environmentalist'.

Alternatively, more fluid self-described association with a range of identities can be used, the most famous of which is the symbolic interactionism's Twenty Statements Test, which some consider cumbersome to use (Dunlap and McCright 2008).

The above examples are based on an implicit understanding of what socio-cultural features of the term 'environmentalist' mean. More specifically defined questions include that of Dunlap and McCright who, when measuring adherence with the environmental movement asked: 'Thinking specifically about the environmental movement, do you think of yourself as—an active participant in the environmental movement; sympathetic towards the movement, but not active; neutral; or unsympathetic towards the environmental movement?' (2008:1049).

In a more detailed way, Clayton (2003) developed a 24-item environmental identity scale, which had high reliability ($\alpha=.85$) and was demonstrated to be a good predictor of a range of pro-environmental behaviours ($r=.64$, $p < .01$). The scale is based on a very specific interpretation of an environmental identity as being about one's connection with nature, with items such as "sometimes I feel like parts of nature – certain trees, or storms, or mountains – have a personality of their own". This has the advantage of making explicit the shared understanding of the identity between researcher and respondent, but, at the same time relies on a very specific interpretation of the identity.

Clayton's scale is concerned with connectedness to nature, but there may be a number of other reasons why someone feels they are an environmentalist. For

example, it could relate to general values such as altruism or specific intellectual concerns, for example, climate change. Or it may derive from a desire to belong to a growing social movement. It is perhaps for these reasons that many researchers use self-classification methods. However, although these measure personal identity, they are not designed to capture the full spectrum of adherence to an identity. If someone holds an identity strongly, as well as self-classification, because identities are formed and reinforced in social contexts, a reflexive recognition that others classify them as holding a particular identity would also be expected. Additionally, association with other people who hold the identity is likely, as this is the basis of lifestyle sub-cultural groupings (Chaney, 1996). As was discussed above, people are more likely to adhere to identities that are seen as positive. Additionally, positive assessment of an identity means the identity is more likely to be invoked in behavioural choices. Therefore positive assessment of the identity is likely to indicate adherence to that identity. Finally, identities are related to behaviour. Not only do identities guide behaviour, but someone is more likely to hold an identity strongly if they have committed or invested in it (McCall and Simmons, 1978). A good example of this, for both the environmentalist and affluent identities, is whether career choice has been guided by these identities.

2.5 Conclusions

This chapter has outlined the key literature relating to Objective One of this research. Values research is one of the key areas of academic consideration of environmental behaviour. Although values research has been undertaken over a long period of time, with Schwartz's work most notable, it is only relatively recently that the three separate general values of biosphericism, altruism and egoism have been identified and verified as distinctly important for environmental behaviour. Biosphericism and altruism are generally shown to be self-transcending values, providing a restraining effect on consumption, and egoism a self-enhancing value providing a motivating effect. However, these correlations have not been widely tested and the available evidence is not consistent. It is therefore valuable to provide further evidence of how these constructs relate to each other and more specifically, how they relate to HIH.

As well as general values, specific values are also important for environmental consumption. Environmental concern is the most widely considered specific value. Materialism is a less considered, but important construct. This is particularly true in respect to the interaction between materialism and income which has been considered only infrequently. Although environmental concern is often measured using the NEP, as this looks only at concern for the natural world, it is possible it does not capture the granularity of environmental concern that is likely to shape behaviour. Because the media represents energy issues and climate change as distinct areas of environmental concern, it is likely that these provide distinct influences on behaviour, aside for concern for nature *per se*, and are related to the other psychological constructs in distinct ways. It is possible that energy issues and climate change are more related to anthropocentric concern for oneself (egoistic values) or others (altruistic values) and concern for the natural environment is more related to biospheric values. As HIH have rarely been the subject of specific research, it is not clear what the level of climate change, energy or natural environment concern is within this group or how this relates to their values.

The chapter also outlined that identity is a further psychological construct that, although only sporadically researched in relation to sustainable consumption, is shown to be conceptually vital to shaping consumption and influencing values. Particularly, the environmentalist and affluent identities are likely to be important in shaping how HIH consume energy. Conceptually, identity is shown to encompass general values, which in turn affect specific values.

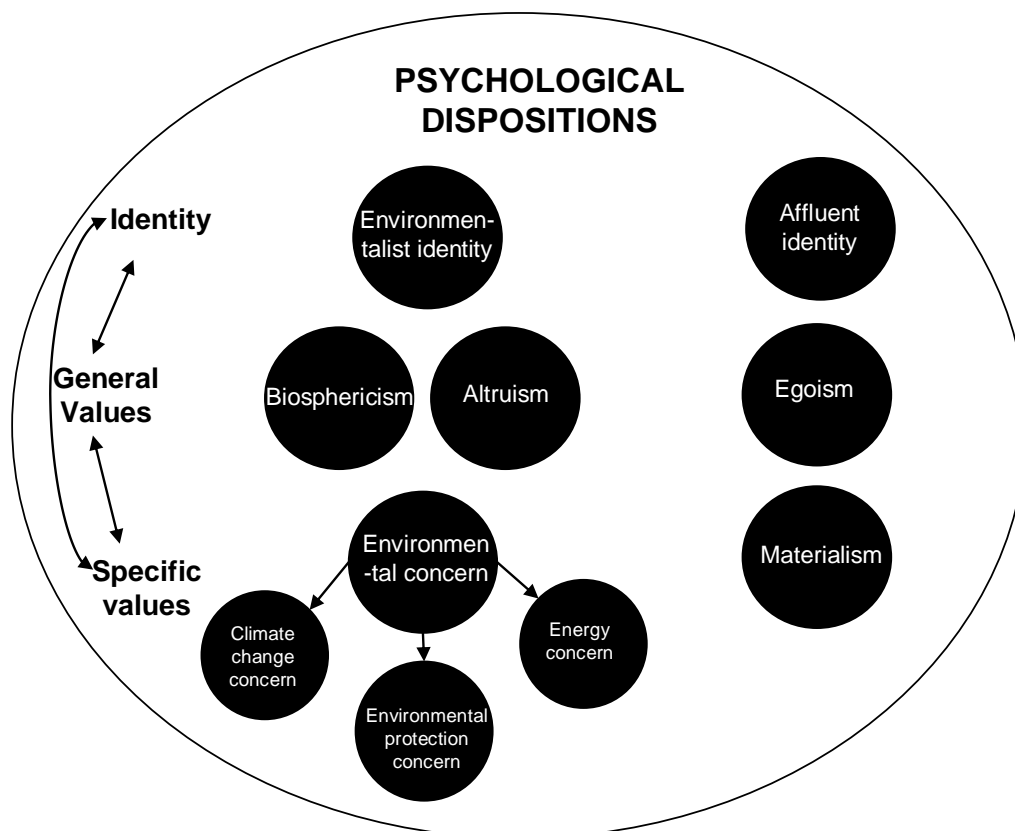
Research suggests that all the constructs mentioned tend to cluster along the self-enhancement versus self-transcendence dimensions as proposed by Schwartz. Specifically, biosphericism, altruism and environmental concern have been shown to relate to each other as self-transcendence values while egoism and materialism are related as self-enhancement orientations. Although only a limited amount of literature relates to the environmentalist and affluent identities, it is possible that these also constructs cluster with the self-transcendence and self-enhancement orientations, respectively. How the concepts cluster is important, because self-

transcendent orientations have been shown to have a restraining impact on behaviour as it relates to the environment, and self-enhancement orientations a positive force. However, existing research mainly relates to pro-environmental behaviour such as recycling, with only sparse indications about the effect of these orientations on ESC.

Although HH are likely to have high levels of ESC, the literature indicates that HH are likely to hold both self-transcendent and self-enhancement orientations and therefore it is unclear what effect these orientations may be having on motivating or constraining their consumption. Socio-demographic variables are shown to relate to the psychological constructs in various, but inconsistent ways, with age, gender and education specifically highlighted as potentially important.

The concepts reviewed above, which will be utilised in this research, are presented in Figure 2.3

Figure 2.3 Psychological orientations utilised in the research



Source: Author

CHAPTER THREE

Needs-based drivers and constraints of environmentally-significant consumption behaviours

3 NEEDS-BASED INFLUENCES ON ENVIRONMENTALLY-SIGNIFICANT CONSUMPTION BEHAVIOURS

3.1 Introduction to the chapter

This chapter forms the second part of the literature review, and, following a social-marketing approach to behaviour change, will consider the needs-based drivers that are specific to certain ESC behaviours, as well as constraints that may be inhibiting increased levels of consumption. This chapter will therefore directly support Objective Two of this research which is: To provide insights into the needs-based drivers and constraints for higher-income households in respect to a selection of environmentally-significant consumption behaviours.

As outlined in the introduction, social marketing provides the second key alternative to the rational approach model, which limits behavioural intervention options to price and information. It is a flexible approach, which in essence utilises marketing principle for social good. The chapter will begin by outlining the key features of the social marketing approach to behaviour change as it is commonly understood, and how it differs from the psychological orientation approach as outlined in Chapter Two. The chapter will highlight the importance placed by social marketing on the identification of 'needs' as a way to understand what motivates different kinds of consumption. Furthermore, the chapter will consider the 'behavioural approach' of social marketing, whereby the drivers and constraints to behaviour are believed to be specific to different behavioural contexts and are therefore researched separately.

Having established the importance of isolating specific behaviours for research within a social marketing approach, the chapter will go on to outline what the most impactful areas of consumption are, and therefore why this thesis focuses on large-engine cars, leisure flights and new durable products as the key ESC for HIH. The Chapter will then outline what the literature suggests may be the key needs-based

drivers for each of these three ESC areas, where appropriate relating this directly to HH. Additionally, it will consider possible constraints to increased levels of consumption across the behaviours.

3.2 Social marketing as a key behavioural change tool

Social marketing, as a concept, was initially defined by Kotler and Zaltman (1971) as a marketing approach that promotes social ideas. More specifically, it has been defined as "the application of commercial marketing technologies to the analysis, planning, execution, and evaluation of programs designed to influence voluntary behavior of target audiences in order to improve their personal welfare and that of their society" (Andreasen, 1995:7). It is therefore about using the insights and techniques of conventional marketing in order to advance behaviour in a way that improves society. Although visibly driven by practitioners and practitioner bodies, social marketing is also an established and growing field of academic research. The extent to which social marketing is merely a different application of marketing or related to pre-existing fields has been greatly debated (Andreasen, 2003; Hastings and Saren, 2003; Peattie and Peattie, 2003). Fox and Kotler (1980) and Andreason (2003) describe how social marketing experienced an extended identity crisis until the 1990's, because it was often confused with societal marketing (i.e. the overall responsibility of company's to ensure products create long-term welfare for consumers and society as a whole (Lazer. 1969; Kotler and Levy, 1969), non-profit marketing (i.e. marketing non-profit organizations and their principles), socially responsible marketing or simply education. However, there appears to be some consensus that social marketing has reached maturity as a distinct field, although still facing many barriers to future growth (Peattie and Peattie, 2003).

Despite recognised particular challenges for social marketing, it draws most of its key principles from its 'mother' field of conventional marketing (Peattie and Peattie, 2003). Therefore, as with conventional marketing, one of the most important social marketing principles is about putting the customer at the heart of the strategy (Hastings and Haywood, 1991). As such, customer segmentation and development

of customer insights are two of the most important components of social marketing (Peattie and Peattie, 2003).

Whereas psychological research assumes psychological orientations are foundational and therefore will tend to transcend a range of behaviours, social marketing takes a behavioural approach where the drivers and constraints of each behaviour are considered to be fairly distinct. The behavioural focus means that the extent of desirable change in the target behaviour is seen by some as the key benchmark to judge the success of a social marketing intervention (Andreasson, 2002). This differs from a psychological orientation approach, as outlined in Chapter Two, where the focus of the interventions is generally geared around how to promote or restrain different types of psychological orientations.

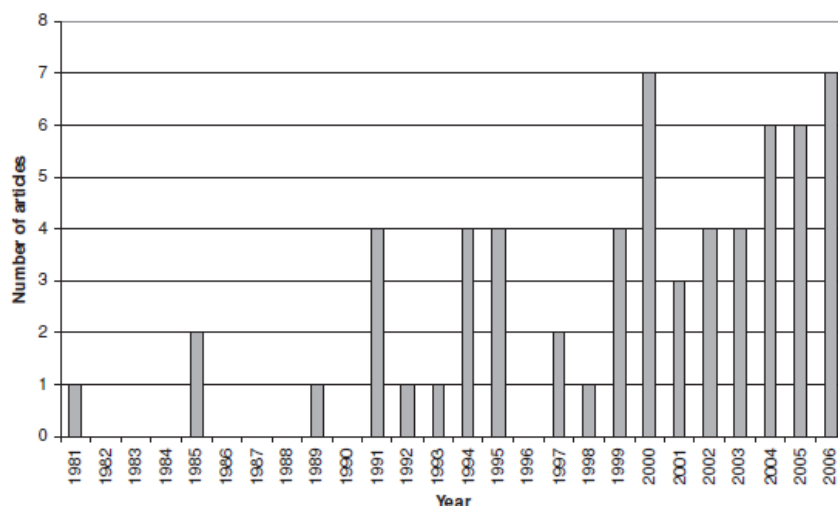
The importance of both the customer targeting and the behavioural focus can be seen in the definitions of social marketing. For example, Kotler and Lee (2002) define social marketing as facilitating the acceptance, rejection, abandonment, modification, or maintenance of specific behaviours by specific audiences. McKenzie-Mohr and Smith (2006) believe that three key questions underpin social marketing: 1) What are the important behaviours?: 2) Which are the most important target groups?: 3) What are the conditions faced by the audience when trying to adopt the behaviour?. Others, such as the Development Education Association, defines social marketing more simply, such as to make behaviours “attractive and easy” (DEA, 2010:1).

Social marketing implementation strategies for shifting behaviour are focused around developing components of the ‘marketing mix’. The marketing mix is traditionally referred to as the ‘4 Ps’ (McCarthy, 1964) and is at the core of marketing strategy (Malhotra and Birks, 2006) as the “controllable parameters likely to influence the consumer buying process and decisions” (Constantinides, 2006:408). Although this has been the case since the 1970’s, this can be seen to be increasingly replaced by relationship marketing approaches (Gronroos, 1994). The 4 Ps represent the core tools that a marketer can use to tailor the offer most appropriately to the target customers. The Product (or service or practice) on offer

can be modified in terms of its function, design and other features; the Price paid creates a strong signal as to the quality and social status of a product; Place refers to the distribution networks where the product is available, which again creates important symbolic signals to consumers and also needs to align with the target audience; finally how the product is Promoted is critical to creating a connection between the offer and the target audience and matching preferences. These four components have been more recently supplemented (with application most often to the service industry) by the People involved, the Physical evidence a customer experiences and the Processes involved (Booms and Bitner, 1981). Utilising the marketing mix, Andreassen (2002:7) describes how social marketing must create... “attractive benefit packages (products) while minimizing costs (price) wherever possible, making the exchange convenient and easy (place) and communicating powerful messages through media relevant to—and preferred by—target audiences (promotion)”.

While social marketing has been most comprehensively applied in the health field (e.g. Mayo and French, 2006), social marketing for environmentally sustainable behaviour is, by contrast, a niche yet growing application area (Takahashi 2009). Takahashi provides an overview of the academic and practitioner contexts of social marketing for environmental behaviour change. Although, as Figure 3.1 shows, activity is growing, Takahashi concludes that the academic literature is scarce and dispersed, concurring with Lutzenhiser’s assessment that “...over the past two decades, social marketing for environmental conservation, has received little serious, well funded, carefully targeted or persistent attention” (Lutzenhiser 2002:51).

Figure 3.1 Articles on social marketing for environmental behaviour change



Source: Takahashi, 2009

Takahashi concludes that the most common single area of research is in recycling, with 11 articles, which reflects the finding that recycling is the largest area of pro-environmental research in general (Lehman and Geller, 2004) with only a handful of research articles in other subject areas, including green consumption. In terms of implementation of social marketing, Takahashi (2009) summarises the North American intervention context and concludes that there is a focus on areas of high visibility and public concern, rather than consumerism and lifestyles, which are more environmentally impactful. This suggests that although social marketing fits with government's desire to work within 'free consumer choice', its application is being restricted by other political imperatives that limit its use on areas of strategic importance.

In the UK there have been an increasing number of interventions which self-classify as social marketing, with recent interventions by Keep Britain Tidy, 'Are you doing your bit?' and the 'Cosy Devon' energy efficiency campaign by Energy Action Devon, being some examples. However, many of these have been criticised as often defaulting to the rational economic approach of information provision, and are therefore are not actually social marketing (Barr, 2003; Wellings et al. 2006). One particularly cited version of social marketing in the sustainable consumption

field is community-based social marketing (McKenzie-Mohr and Smith, 1999), where changes made in community with others, are perceived to be more easily made and more enduring. The key programme that can be assessed as implementing this approach is Global Action Plan's EcoTeams. EcoTeams is based on groups of around six householders being brought together monthly over a four to six month period to consider how they can reduce the environmental impact of their consumption. It has been implemented in a number of countries internationally (Hobson, 2002) and although, as Chapter Five will outline, it has been the focus of some academic research, income has not been a feature of this research and comparisons with those from the general population have not been made.

3.2.1 Needs and social marketing – the traditional approach to needs

When researching how a social marketing intervention should be designed, the foundational task is to create 'customer insight' (French and Blair-Stevens, 2005) Within conventional marketing one of the most widely adopted ways of capturing relevant customer information is through the identification of the needs of the target audience they are seeking to satisfy, when undertaking a particular kind of consumption behaviour (Malhotra and Birks, 2006). The transfer of the importance of needs from marketing to social marketing is evident. Buchanan et al. (1994:51) highlights the role of needs when he comments: "Two issues stand out: whether social marketers act like commercial marketers in seeking to identify and respond to unmet consumer needs or wants (fill a market niche') and whether there is a true exchange of values in the social marketing situation". Providing a potential answer to the question posed, Buchanan himself (1995:527) states: "The philosophy of social marketing underscores the necessity to be aware of and responsive to the consumer's perception of needs". Weinreich (1999:8) also emphasises the role of needs in social marketing: "An effective social marketing program focuses on the consumer; all of its elements are based on the wants and needs of its target audience rather than on what the organization happens to be "selling".

A focus on needs could also be seen as the essence of a 'consumer' approach. For example, in relation to health, Buchanan (1994) highlights this, as well as the non-judgemental empathetic view of consumer behaviour that this integrates: "Consumer orientation means that one 'must understand and empathize with the perceptions, motivations, behavior, and above all, needs of the consumer in order to produce effective health communication' (p.137)." Andreasen underlines this when he judges good social marketing to be about understanding and responding to "where the customer is coming from" (2002:10)

3.2.2 The role of constraints

While understanding what drives current behaviour is often the key focus of social marketing, others emphasise that what constrains consumption from being even 'worse', may be just as important. As Wilk states: "consuming behavior is always the result of balances between factors that promote, and those which inhibit or restrain perceived needs and wants (*push* and *pull*)."

(Wilk, 1999:15). Indeed it is widely understood that the difference between people's motivations to behave in a certain way and their actual actions are moderated by situational constraints (O'Riordan, 1981; Guagnano et al., 1995, Barr, 2005). These constraints may be related to physical situational constraints such as access to time or money, or psychological constraints around internally held values or perceptions of normative judgements.

Although the pinpointing and bolstering of constraints is included in the social marketing approach (e.g. Mayo and French, 2006) some academic commentators believe constraints should attract more focus. Wilk (2002), for example, suggests that: "The most fertile ground for intervention and policy making may well lie in finding ways to elaborate or bolster existing constraints on consumption, rather than in creating new ones or manipulating incentives" (p.10).

As discussed above, within a social marketing approach, needs-based drivers and constraints are believed to be related to particular behaviours. For this study, it is therefore important to first isolate which ESC behaviours should be a priority. The

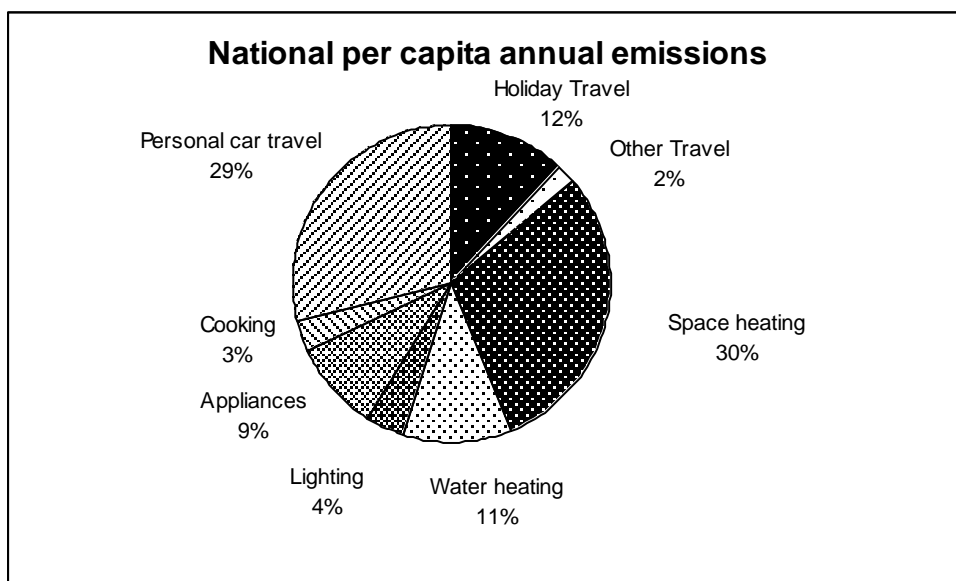
following section will outline why leisure flights, large-engine cars and new durable product consumption are the focus in relation to their consumption by HH.

3.3 Energy significant consumption behaviour

3.3.1 Direct energy

In order to arrive at appropriate behavioural categories to research, it is useful to refer to the 2007 Energy White Paper's summary of UK behavioural sources of carbon dioxide emissions, which relate similarly to energy consumption (DTI 2007b). As shown in Figure 3.2, this indicates clearly that holiday travel, personal car use and space heating of the home are the three key areas of energy impact, totalling an estimated 72% of all domestic direct energy use.

Figure 3.2 Individual annual carbon emissions, average per capita carbon emissions in 2005



Source: Department of Trade and Industry, 2007

As outlined in this chapter, from a social marketing perspective, individual behaviour is focused on in order to devise intervention strategies. The reasoning for this becomes clear when looking at specific categories of consumption. Each

consumption practice will be subject to different levels of volition and different needs-based influences. For example, space and water heating are based in large part, on the heating systems installed in the home and the size and build of that home, as well as draught proofing and insulation. These are related to socio-cultural influences over what is a desirable size and age of home but are also a product of predetermined socio-technical systems. Behavioural issues related to heating temperatures or heating regime, for example, are also important and these will be more directly related to socio-cultural needs, such as to have a warm home for visitors or to feel enabled to wear clothes of choice around the home (Shove et al., 1998).

Personal car travel, on the other hand, will be related to how energy heavy the car is and the miles travelled. Both of these will have a wide range of antecedent drivers which relate back to how needs are connected to certain practices, objects and the satisfaction of other needs. The need to subsist via employment is related heavily to the use of the car, which in many cases is related to the location of the home, rather than specific demands of work. This, as well as the need to move children, animals and objects around, are examples of how needs such as participation and leisure are strongly symbolically and structurally linked to the personal car. People are therefore, in many ways, 'locked in' to patterns of car use (Jensen, 1999). As such, householders can be considered less in control of their patterns of car use than their choice of car. Although all the factors influencing energy use are of value for research, in order to gain insights on the practices of HIH that can be influenced by social marketing, it is important to focus on areas that are perceived as most volitional. For this reason, holidays by air and large-engine car choice will be focused on as significant areas of direct energy consumption.

3.3.2 Indirect energy

The above analysis relates to direct energy consumption, however, indirect energy consumption, which is energy used to create consumption goods and services, is just as important. Using the Department of Energy and Climate Change figures,

George Monbiot estimates that although the UK's greenhouse gas emissions are officially considered to have dropped to 566 million tonnes of carbon dioxide equivalent in 2009, from 788 in 1990, in fact, if the emissions from surplus embodied energy was taken into account they would be shown to have risen by 19 million tonnes (Monbiot, 2010). In America it is estimated that about 50% of all household energy use is indirect (Bin and Dowlatabadi, 2005) and a similar figure has been estimated, based on a meta analysis of input-output or 'household metabolism' analysis in different countries (Moll et al., 2005).

Investigating what drives the consumption of products by HH is particularly important because "for affluent people most energy consumption is related to the purchase of goods and services. "(UNESA, 2007:7). This claim is backed up by research indicating that indirect household consumption, as a result of embodied energy in consumption items, increases as a proportion of overall household energy use as incomes rise (Lenzen et al., 2006; UNESA 2007). There are a number of product areas where energy use is known to be particularly high. Food has been shown to be one of the most energy intensive consumption categories and additionally, is subject to expenditures of around 20% of household budgets (Moll et al., 2005). Meat is known to be a particularly energy intensive food category (York and Gossard, 2004; Pimentel and Pimentel, 1996).

Household goods and clothing are also shown to have relatively high-energy intensities and are responsible for around 15% of household expenditure (Moll et al., 2005). The role of material goods in people's lives appears to have grown, with Jackson and Marks (1999) revealing that, for the UK, the majority of increase in household expenditure was on material goods, including durable goods. Household products and clothing is a very broad category, and within that, it would be expected that durable products such as washing machines, electronic goods, household effects such as cutlery and fixtures and fittings and including clothes, would be amongst the most energy intensive, although, the input-output research does not indicate this level of detail. Certainly, Cooper (2002), notes that extending the life of a durable product, for example, through reduced disposal and increased second-hand demand, combined with increasing the built in durability of products

themselves, are vital to increasing sustainable consumption. Yet, at the same time durable products“have attracted relatively little in-depth research and whether the academic research community regards them as central or peripheral to sustainability discourse remains somewhat unclear” (Cooper, 2002:11).

The energy intensity of new durable products, combined with their increasing use and the financial ability of HH to consume in this area, situates this consumption category as a useful focus for this research. In summary, three ESC will be focused on: leisure flights, large-engine cars and new durable product consumption. These will now be introduced in more detail, and the relevant literature regarding needs-based motivations and constraints to their increased consumption will be reviewed.

3.3.3 Leisure flights

Tourism is now the world’s largest industry, having surpassed traditional industries such as agriculture, automotive and electronics (McIntosh et al., 1995). It is particularly important in terms of its environmental impacts (McKercher, 1993). Although there is a long established research interest in ‘eco tourism’ (Orams, 1995; Weaver, 2001), this forms of tourism has tended to relate more to the conservation of animals and places and less on the global energy issues of tourism. A newer, and related area of research, is in the field of sustainable tourism, which focuses more specifically on managing for the longer-term social, economic and environmental impacts of tourism (Clarke, 1997). Research has, however, focused on local impacts and tended to circumvent broader factors such as travel mode and the impact of the distance of destination choice (Hall, 2005). This is despite the fact that, in general, the largest environmental impact of tourism relates to the energy impact of leisure flights, with the distance travelled and frequency of trips being the most significant factors in a tourist’s energy use (Becken et al. 2003a, 2003b; Hall, 2005).

The energy use and tourism nexus therefore remains relatively unexplored, other than in a few cases (e.g. Gossling, 2000; Olsthoorn, 2001; Hoyer, 2000; Becken, et

al., 2003a, 2003b; Bohler et.al., 2006). Where research on climate change and energy use does exist, the bulk of this research, and indeed Hall's overview of it (2005), are focused more on climate change's impact on tourism than tourism's impact on climate change or energy use. As a consequence of the paucity of data, some have expressed more precisely that the global consequences of energy use, related primarily to leisure flights, is an almost ignored aspect of sustainable tourism that needs urgently addressing (Gossling, 2000). Shaw and Thomas (2006:214) conclude, "The tracking of travel behaviour as well as opinions on the sustainability of air travel will be critical over the coming decade".

Leisure flights have increased by a factor of five since the early 1970s, and it is forecasted that in the next 30 years, demand will increase by around 300% growth in demand (DfT, 2003). Over 75% of visits in the UK are by air (nVision, 2006) and half of all adults in the UK flew in 2001 with around half taking two or more return flights and the other half one, with 87% of these trips being for leisure purposes (Lethbridge, 2003). Some pinpoint the reduction in price of flights as a main reason for this growth, but the fact that over the decade to 2002 people on average spent 250% more of their income on air travel (Caves, 2002) means that other factors are at play. One indication is that holidays are increasingly seen as vital for fundamental need satisfaction, with nVision finding that in 2006 "two-thirds of consumers believed a holiday was 'absolutely necessary' to live properly, a 50 per cent increase since 1993" (nVision, 2006 in DEFRA, 2007b). The impacts of increased leisure flights are highly environmentally significant, with a return flight to Australia being more than 60% of the average per capita yearly carbon emissions of someone in the UK (Climate Care, 2009 figures). Gossling (2000) estimated that the average global citizen emits 4000 kg CO₂ equivalent per year and the average two week vacation involving a long-distance flight resulted in around 3385kg, 75% of which comes from the flight.

Whereas some have asserted that the increase in travel represents a democratisation of air travel to new flyers from lower socio-economic groups (Shaw and Thomas 2006), others refute this proposition. DEFRA research, for example, argues that the evidence shows that the rise in air travel is primarily though

increased travel by affluent householders and therefore these should be the main focus of research and behavioural interventions (DEFRA, 2007b). UKERC (2006:4) have concluded that “much of the recent expansion in flying has occurred because better off people are flying more often” whereas the number of international leisure trips made from these airports by people with a household income of less than £29,000 p.a. actually fell”. (UKERC, 2006:92). Furthermore, the UKERC predicts that much of future demand will also be from wealthier groups, although others pinpoint additional strategic groups such as young adults (Shaw and Thomas, 2006). There is a wide range of evidence indicating a strong link between income and air travel (Brons et al., 2002; Greening, 2003; Cairns and Newson, 2006; Korbetis et al., 2006; Brand et al. 2008). Brand (2008) and colleagues conclude that “In terms of variation by socio-economic factors, the most conclusive evidence from this study has been the relationship between income and emissions. This type of discovery has implications for those types of policies designed to exploit socio-economic characteristics.” (p.13)

The geographical location of the destination will generally dictate whether flying is utilised and for how long. There is a distinction in the literature made between short-haul holidays which are defined as leisure flights within Europe, (Lethbridge, 2003) and long-haul holidays, which encompass leisure flights to destinations outside Europe. Utilising a 2001 Omnibus survey of 1,850 randomly selected people, DEFRA (2007b) states that these two categories made up an estimated 84% of flights: 63% for European and 21% for long-distance destinations. DEFRA also reports that those in higher social grades tend to take more holidays of all types and these tend to be overseas, but also take more short breaks than long holidays (2007b). Short breaks tend to be to short-haul European destinations and long holidays tend to be to long-distance locations, although with the popularity of phenomena such as shopping trips to New York and many annual holidays taken in Europe, this is not always the case.

The distinction between these types of holidays is important as they are likely to perform different types of need satisfaction. Although some research considers long-distance choices over European or domestic, this research is not common

and does not look at energy implications. However, a couple of pieces of research in this emerging area give some interesting insights into the nature of long-distance destination choice (Gossling, 2000; Bohler et al., 2006). Bohler and colleagues study of German residents showed that those who travelled to more long-distance destinations generally had higher incomes and travelled more often. Additionally, long-distance travellers were the smallest segment but accounted for 80% of the total energy use of those surveyed, underlining the relative energy significance of long-distance air travel (Bohler et al., 2006).

However, it cannot be automatically interpreted that because long-distance destinations are the most energy intensive type of trip, they are therefore the most important category of tourism consumption to be addressed within the higher-income groups. Data show that the large majority of travel originating from Europe, stays within Europe (Amelung, 1999) and some research has predicted that more flexible working conditions will promote growth for short-haul holidays (Bohler et al. 2006). This means that by volume, short-haul flights for shorter breaks may be, in aggregate, as significant as long-distance flights. One study showed that income elasticity for long-distance destination travel is significant but for short-haul this is not the case (Lim et al., 2008). This means impacts from short-haul may be more resilient to any fiscal measures and may require more challenging intervention strategies.

The literature is clear that leisure flights are a significant source of energy consumption and that HIH are the most important group to consider when reducing energy in this area. It is also apparent that given the links between income and energy use, taxes on flights are likely to be an ineffective and regressive way of reducing consumption by this group (Brand et al., 2008). It is also apparent that changing behaviour around leisure flights may be particularly difficult based on voluntary behaviour alone. A report on the public's view of sustainable tourism noted, a “relatively low willingness of consumers to act in any way that impinges upon their holiday” (DEFRA 2007b:25).

Some of the key research questions to be answered on this topic have been pinpointed by Shaw and Thomas (2006:214) such as: “how do air travel consumers perceive the benefits of aviation, and how do they weigh these against the adverse consequences for the environment and society? How can governments in democratic societies educate or encourage the populous to move towards a more sustainable lifestyle without resorting to pricing mechanisms that exclude those on lower incomes?”. In this context, social marketing presents itself as a vital way of reducing demand for leisure flights by H1H. This has not been the specific subject of prior research, and there is little indication of what need satisfaction might be connected to leisure flights, in general, or European holidays versus long-distance holidays, in particular. There is however an established body of generalised needs motivation literature in the tourism field, which is useful in providing insights about why people take holidays.

3.3.3.1 Drivers of holiday-taking

Leisure flights are underpinned by holiday-taking, which, in relation to energy use, could be seen as two separate events. Firstly, the decision to go on holiday in the first place and secondly, the decision about where to go (Crompton, 1977). These motivations have been distinguished as push factors i.e. internal motivations (in this research interpreted as needs-based drivers), and pull factors i.e. the lure of the destination (Dann, 1977).

Up until at least the 1970's, Crompton suggests the focus of the tourism industry was on emphasising the attributes of the location, such as culture, facilities or activities to provide a 'pull' factor for holiday motivation (Crompton 1979; Taylor 1974). However, this has resulted in an emphasis on the 'where, when and how' and not the 'why' (Crompton, 1979; Sirgy and Su, 2000). The question of 'why' holidays are taken is the basis of this thesis and therefore, is of most relevance. To address the gap in the research, a group of researchers that studied socio-psychological factors began to investigate 'push' factors, in more depth using mainly qualitative approaches, often referred to as tourist motivation research (Crompton, 1979; Hill 1965; Plog, 1976; Dann, 1977). This showed not only the

importance of push factors but that in some instances the location was actually unimportant (Crompton, 1979).

The fact that the destination may not be very important is significant for this research. It introduces the possibility of promoting low-energy alternatives by considering which needs are being satisfied and then satisfying them through more sustainable product offers instead. Research into the 'push' motivation factors has often revolved around the concept of needs (Dann 1977, 1981; Crompton 1979; Krippendorf 1987; Pearce 1986; Pizam and Mansfield 1999; Gibson and Yiannakis 2002). As outlined in this chapter, with a traditional marketing research approach needs are primarily interpreted in the context of the individual and where that individual is, in terms of the hierarchy of need fulfilment (Maslow, 1943).

Despite the range of research cited above, Fodness notes in 1994, that tourist motivation is one of the most under-researched areas of tourism, empirically and conceptually (Fodness, 1994), with much research relating back to the work of Crompton and his seven categories of needs motivation (1979) and Krippendorf's eight categories (1987). It is, therefore, perhaps not surprising that research could not be identified that relates the 'push' factors of need satisfaction to the 'pull' factors of different types of destinations (long-distance or European) that are likely to necessitate travel by air.

Using Crompton's and Krippendorf's work as well as wider range of literature, ten generic areas of need satisfaction, which have been identified as important for driving holiday-taking, have been highlighted as providing a useful starting point. The analysis below has been grouped under the three needs satisfaction categories of experiential, functional and relational, which provide a useful and accessible way of grouping types of need satisfaction (Parks, Jaworski & MacInnis 1986; Vickers and Renard, 2003; Kim et al. 2006). The functional category relates to need satisfiers which are based on utility and are more cognitive in nature. For example, buying a car because it is perceived to be reliable can be seen as functional. The experiential category relates to more affective ways of satisfying

underlying needs, based around the feelings created by the consumption, both prior to, immediately and in retrospect.

Demarcating the experiential motivations for consumption becomes vital in the contexts of the fundamental and increasing role of experiences in driving consumption decisions, otherwise known as the 'experience economy' (Pine and Gilmore, 1999). Here, Pine and Gilmore argue it is the lived experience, and most critically the memory of the experience, that becomes the 'product'. The relational category, also known as the social category, encompasses the ways in which needs are satisfied via inter-personal experiences. Here, the presence of others and interaction with them, is central to fulfilling underlying needs.

The process of compiling the following literature highlighted that classification within experiential, functional or relational categories is possible, and useful, but should not be viewed as definitive, because the areas of need satisfaction often overlap the categories.

3.3.3.2 Experiential drivers

Many studies have found that the need for stimulation is an important motive for taking a holiday (Wahlers and Etzel, 1985; Fodness, 1994; Gibson et al., 2002; Kozak, 2002). This aspect is therefore different from escape from routine because it is fundamentally motivated by the move towards, something rather than from something, although they are connected. Aspects such as adventure, newness, excitement and education are all related to this need. Krippendorf refers to this as 'broadening the mind' (1987). For Crompton (1979), the need for stimulation is placed in the categories of 'novelty' and 'education', which, he defines as a 'pull' factor (also referred to as cultural factors). However, it is unclear why the search for the new and the educational should be seen as external factors 'pull' factors rather than providing a psycho-socio-cultural 'push'.

The search for cultural and educational stimulation has been connected more strongly with higher-income groups. For some, this could be due to the desire to increase their cultural capital, necessary for engagement and acceptance into

higher social classes (Veblen 1899; Bourdieu, 1984). For the Henley Centre, the link between the desire to understand new cultures and seek out new experiences is directly related to tourism experience, which is related to available income (Henley Centre *in* Pizam and Mansfield).

Stimulation is strongly correlated with income levels. There is an indication that those with higher education or income levels seek greater stimulation and education while on holiday and are more open to change (Bohler et al 2006; Henley Centre *in* Pizam and Mansfield, 1999) and these factors have been directly linked to a propensity to take longer distance holidays (Bohler et al 2006). Uysal and Hagan (1993) state that foreign travel is often connected with the desire to experience other lifestyles.

The desire to look forward to something exciting and stimulating is also a distinct factor for consumption in a number of areas, a concept which can be traced back to Bentham (1789). Holidays are a consumption practice specifically identified with the anticipation (Loewenstein 1987). The adage 'your holiday starts a week before you go and ends a week before you get back' reflects this. This can be related to the need for creation i.e. imagination and inventiveness and idleness in terms of daydreaming and fantasising (Max-Neef 1991).

'Self-determination' and 'Freedom' have also been identified as fundamental categories of needs motivations for tourists by Krippendorf (1987). These stem from his assessment of tourism as providing a way to free ourselves temporarily from the anomic existence of the modern western world, a concept developed by Dann (1977). Holidays, therefore, allow people to increase their self-recognition and sense of existence and often include a strong fantasy component. This aspect is perhaps the most directly connected to fundamental needs, as freedom is identified as a universal need by Max-Neef (1991).

To experience being in a beautiful place is a widely recognised driver of holiday-taking (Krippendorf, 1999). Aesthetically pleasing surroundings and landscapes are often associated with successful satisfaction of relaxation needs (Max-Neef, 1991;

Tapachai and Waryszak, 2000). Additionally, the desire for sunny weather is something that can be considered distinct from the motivation for experiencing beautiful natural landscapes. There is a deep symbolic connection between sun and a 'holiday', with holiday-makers often stating the sun is a reason for travel (Krippendorf, 1999). Citing research by Mintel in 2005, DEFRA notes that "Despite the increasing draw of experiencing the culture of a destination...the guarantee of nice weather is still the second most important factor in determining an enjoyable holiday" (DEFRA 2007b:15).

3.3.3.2.1 Functional drivers

Krippendorf, in an overview of tourism motivation theories suggests that the idea of getting away from something monotonous (rather than going towards something exciting) is a major theme (1987). Relieving monotony does not always refer to doing something different from the norm, but also doing it in a different social or physical context – particularly a change from the dominant social context present in working environments. Research suggests the benefits of escape precede the actual holiday and last after the holiday is over (Crompton 1979).

For Krippendorf moving away from something (i.e. routine) is included in the category of 'escape' (1987). Fodness (1994) has also found that the idea of 'escape' is a strong factor in holiday-taking. For Crompton, this is described more specifically as 'escape from perceived mundane environment' factors (Crompton, 1979), although he also talks about the motivation to change the dominant social contexts in one's life.

Significantly, for Crompton, this did not appear to link with the choice of any particular destination as long as it is socially and physically different from the norm. Therefore the requirement to have a break from routine may be more influential in determining the decision to go on a holiday, than the destination. The old adage, 'a change is as good as a rest' seems appropriate here. As such, there is the possibility that social marketing could facilitate the need for 'escape' to be fulfilled in lower energy ways than, for example, a long-distance holiday.

There is nothing to suggest that for HIH the breaking from routine would be more dominant than for that of other income groups who are engaged in routine work in their daily life, for example, the poorer survivor and sustainer groups, outlined in Shaw and Williams (2002). However, highly demanding jobs with restricted leisure time that are typical of higher paid roles could enhance this need satisfier. Using Max-Neef's framework, the underlying need most related to escaping routine would be to enhance the satisfaction of freedom, in terms of providing temporal and spatial plasticity.

Alleviating pressures, which is about wanting to get away from demands of work, responsibilities, social groups or other every day stresses (Krippendorff, 1987), can be seen as a distinct category to escape from monotony. For Krippendorff, pressure alleviation falls under his notion of wanting to get away from something and most related to the desire for 'recuperation and rejuvenation'. Although Crompton (1979) includes pressure alleviation as part of 'escape from routine' and therefore, close to the above description of monotony relief, his own research and others', suggests that there is a case to separate the two. He notes that short-term disequilibrium is often described as 'pressure' which requires immediate attention and could be relieved by one holiday. The motivation to holiday in order to alleviate pressures is likely to be as particularly relevant to certain types of HIH, whose income level is remuneration for high levels of responsibility, engagement and time in the workplace.

Under Max-Neef's categorisation this category could be aligned to both subsistence and protection – the requirement to keep oneself in a fit state to work, thereby ensuring subsistence and protection. In other words, "to maintain mental and physical health (subsistence) or as a form of "insurance system" of productive capacity (protection)" (Max-Neef 1991:32).

The need to relax, although sometimes considered the same as getting away from routine or pressures, is appropriate as a separate need driver. This need can be seen as different from both a break from routine, or alleviation of pressures, because neither of these necessarily means relaxation is sought, rather, a change

of circumstance or a change of external influences, often socio-psychological. Although relaxation can be sought under these circumstances it is equally possible that someone may choose activities that are as mentally or physically demanding, but avoid certain aspects of life (Crompton 1979). Sometimes this means having home comfort and routine but without all the stress of daily life (Crompton 1979).

Although this aspect is best captured under Krippendorff's 'recuperation and rejuvenation' category (1987), Crompton specifically identifies a 'relaxation' factor (1979). Crompton's separation of this category is backed up by Max-Neef's needs categorisation, which identifies 'idleness' as a specific need in itself. This idleness does not necessarily mean physical idleness, but can relate to the exploration of thoughts, fantasies or hobbies that are suppressed in normal life (Max-Neef 1991; Crompton 1979). Consequently, the result of seeking idleness may result in exhaustion from a vacation, such as pursuing adventure sports, but this is a form of exhaustion that is not incompatible with fulfilling the need of relaxation. As with the alleviation of pressures, it is likely that HIH have demanding jobs both mentally and in terms of time demands. Therefore the relaxation needs could be a dominant theme, either mentally or through the pursuit of activities that are difficult to find time for in normal life.

As well as the above psychological and social factors, in more contemporary holiday cultures, pursuing hobbies or interests form a distinct functional reason for taking a holiday (Urry, 1995; Crompton 1979). Crompton's (1979) study indicated that pursuing hobbies is associated with fulfilling the need for relaxation. Holidays provide the time for the mind to wander to areas of interest that are kept suppressed during normal routines (Crompton 1979). The role of hobbies is an important consideration as regular long-distance trips involving a number of members of a household, may hinge on the hobbies of one or two members of a family, for example, ski-ing, powerboating, golf, or windsurfing. The relatively new identification of 'hobby tourism' as a niche growth area within tourism (Jelincić, 2009), along with an increased number of long-distance hobby tourism offers, available to UK residents, underlines the potential importance of this area to studying energy intensive leisure activities by HIH.

3.3.3.2.2 Relational drivers

The need to spend time with family members, in a way that staying at home can not provide, is one often recognised as a common motivation to travel (Fodness, 1994). Additionally, coinciding holidays with visiting family or friends is also common. Krippendorff classifies these aspects as compensation acts, to make up for time away from family and friends. Two of Crompton's seven needs motivations are 'enhancement of kinship relationships' and 'facilitation of social interaction' (1979), thereby separating family interaction from social interaction, in general. Mannell and Iso-Ahola (1987) categorised interpersonal social interaction as one of the two major tourism need motivations, with personal factors the other. Dann describes tourist motivation as arising from that which is desired yet lacking, and specifically he relates this to the need to fulfil social interaction that is missing from today's anomic society (1977). As well as social interaction whilst on holiday, holidays also provide the basis of social conversation once at home (McCabe, 2010).

The desire to participate in social groups through the contribution of relevant and desirable experiences is highly related to identity and status aspects of holidaying. Aspects of identity are also shown to be central in tourist motivations and in consumer behaviour in general, as outlined in Chapter Two. As with 'freedom', identity is directly related to a universal need as identified by Max-Neef (1991). Urry notably commented that the consumption of leisure activities "cannot be separated from the social relations in which they are embedded" (Urry 1995: 129). Shaw and Williams go further to state that in relation to tourism, "there are socially constructed boundaries to individual choice based on social positions, expectations and socialisation" (1994). They go on to say that wealth and income are one of many structural characteristics that influence how activities are experienced. This position is supported by Featherstone (1987:115) who states "The significance and meaning of a particular set of leisure choices... can only be made intelligible by inscribing them on a map of the class-defined field of leisure and life-style practices in which their meaning and significance is relationally defined with reference to structured oppositions and differences."

The role that the need for identity plays in driving holiday consumption can be conceived of within the categories of status, self-congruity and self-discovery, although these categories influence each other in vital ways. Status relates to the development and maintenance of relative social position and is a needs-based motivational factor that has been developed at length in sociology literature (e.g. Veblen, 1899; Hirsch, 1976). Crompton (1979) identifies prestige as a specific motivational driver of holiday choice. However, he notes that few people were willing to accept it as a driver and suggests that this may be because the increasing access to holidays meant the exclusivity factor was reduced. It may also be that due to socially desirable responding factors (Mick 1996), people are unlikely to admit such influences.

Nickerson (1996) has stressed the connection between identity-based status needs and tourism. "Applied to tourism, motivation is represented by social, ego and self-actualisation needs". He states that ego and social factors influence travel through people's desire for social acceptance and admiration of relevant others. Nickerson explains that those who aren't able to go on a foreign holiday are often pitied and therefore the motivation to go on holiday could be to avoid pity. Similarly, Holloway and Taylor (2006) explain the motivation to travel as related to the desire to conform, in that if the majority of one's lifestyle group travel, then there is a high social pressure to do the same. They also recognise the role of fashion in determining travel choice by shaping conformity.

The consumption of cultural tourist activities is particularly associated with higher-income groups who use the experience to develop cultural capital and maintain status within lifestyle groups (Hughes, 1987). Amerlung elaborates that tourism might fulfil those needs and explains how this is related to HIH: "one might climb Mount Everest in order to gain esteem, which is a part of ego needs. The tourist must also have the ability to use the opportunity. For example, one needs a lot of money to climb Mount Everest, which means that few people have the ability to use the opportunity of climbing Mount Everest." (Amerlung et al.1999:20). In

summary, status based identity motivations will result in tourism consumption, which is scarce and similar to those in aspirational reference groups.

This will be highly influenced by social identity and ideal self identity, as well as the ideal self. Self-congruity is the need to maintain equilibrium by consuming in ways which are congruent with images of self (actual self, ideal self, social self, ideal social self). Specific thought on this aspect has been undertaken by Sirgy and Su (2000) who examined how self-congruency with visitors to a tourism destination, affects consumption. It is surmised that the degree of fit between a tourist's self-image/ideal image and the visitors to a destination', and other factors that infer types of visitors, is important in predicting travel. Exploration of self could be defined as the evaluation and understanding aspects of self-image, which, when better understood, can be more finely matched to create self-congruity. Crompton identifies 'exploration of self' as a specific tourism motivation (Crompton 1979). Krippendorf (1987) utilises Maslow's category of 'self-actualisation' (1943), which has been described as a situation where someone strives to get to know and accept their 'actual self concept', thereby increasing harmony between their environment and their self concept. This could be seen in contrast to those models that describe a continual effort to improve self-concept and achieve their 'ideal-self' in a more status driven way (Maddi 1968).

Despite the assumed centrality of socio-culturally shaped lifestyle factors, they are notoriously hard to examine empirically. Identity based motivations are often sub-consciously held and so are difficult to express. Additionally, people do not like to think they are not acting autonomously or are overly influenced by others (Fisher, 1993). Furthermore, motivations based on others that are socially undesirable, such as personal gain or vanity in relation to others, is likely to be sub-consciously and consciously suppressed (SDR).

3.3.4 Large-engine cars

Automobiles have been assessed as the world's fastest growing energy consumption category, and within this, private car use is the biggest factor

(Worldwatch Institute, 2004). Of all energy consumed in OECD countries, between 20% and 30% is used for transportation, which includes international sea transportation, domestic air, domestic shipping, road and rail. Over 70% is for personal transportation (IEA, 1993). Globally, the impact of this sector is much higher still, with around 66% of CO₂ emissions and 47% of nitrogen oxide related to personal transport (Walsh, 1993). Not only are the impacts of car use currently large, but they are consistently growing. Greening et al. (1998, 2001), predict that personal transportation's contribution will increase further as the efficiency of other sectors improves disproportionately. The number of vehicles globally has risen 8% since 1950 and miles travelled by around 1.5% which, despite some modal energy efficiency gains, has translated into an increase of energy related to personal car use of just under 1% per year since 1973 (Greening, 2003). Without intervention, the growth in car impacts is likely to continue to increase, even as other sources of emissions fall. This is because presently, there are very few substitutes for petroleum in personal car transportation, and wide scale electrification of cars some way off. Additionally, the car plays a fundamental role in society and its structures. Gartman (2004:169) expresses recent socio-cultural reinterpretations of the car when he quotes Urry (2000) as suggesting "that sociologists abandon their idea of the car as a thing, a simple object of production and consumption, and look at it as a system of interlocking social and technical practices that has reconfigured civil society."

Underlining the centrality of the car, although recent hikes in the price of oil would be expected to reduce car use, this effect has failed to materialise, suggesting an inelastic demand structure (Greening, 2003). In her 2003 paper on the effect of behaviour on transport efficiencies, Greening expresses caution to relying on price increases, instead highlighting that behavioural responses are as important in shaping energy use from transport as fuel prices. As with leisure flights, because income is highly related to energy use from personal transport, and those with higher incomes are relatively insulated from higher prices, behavioural drivers for this group become more important. This is compounded by the regressive effects likely to result from general price rises.

Although the role of income in driving car consumption is to be expected, its dominant role over all other factors is noteworthy, as demonstrated by Shipper's 1997 paper, which states "CO2 emissions from travel increased in most IEA countries between 1973 and the 1990s from income-related behavioral factors" (2005:1). As is discussed in Hurth and Wells (2007), income is related to personal transport in a number of key ways. Studies show a very strong correlation between car ownership and wealth, which is consistent across countries but with varying strengths of relationship. Although saturation at higher levels of wealth is expected to occur at some point, the IEA has countenanced the possibility that there may be no upper limit based on income (IEA, 2004). This is noteworthy because in the USA, car ownership is believed to be the strongest statistical predictor of total national energy needs (EIA, 2005). Income and vehicle miles travelled in the USA since 1983 have followed a 'near lock-step formation' with a growth in income of 3.2% average per year between 1983 and 2001, and a growth in car travel of 3.6% (EIA, 2005, p.18). Additionally, wealth had a 'dramatic effect' on the number of cars per household with around 0.1 cars being added for every US\$5,000 increase in income (EIA, 2005, p.12). Income is also known to be a major factor in the driving preference for more energy intensive cars (Greening, 2003; EIA 2005; Schipper, 1997) which is the focus of this thesis. Some have argued that the demand for more energy intensive cars as incomes have risen, has been a key factor undermining any car efficiency improvements (Schipper, 1997).

The fundamental links between income and energy heavy cars is reflected in the strong positive correlation between the price of a car and its energy intensity. Based on data of all 6144 new cars in 2008 and their carbon dioxide emissions, the relationship was found by the author to be strong ($r_p = .70$, $p = <.01$), with the higher energy cars being a variety of sports cars, luxury cars and sports-utility vehicles. This is particularly significant because it has been found that income increases the likelihood of choosing to buy an expensive car (Lave and Train, 1979). Stevenson, McQuivey, and Denton (2002) found that those who spent more on their car had more income and assets than those who spent less. Income has been found to be a predictor of prestigious car ownership and is seen as an important segmentation variable in the automobile market (Byun and DeVaney,

2006). However, at the same time it has been found that wealthy people can also choose to buy less expensive, less powerful cars (Stanley and Danko, 1996).

The above data show that for HIH, energy use from cars is a factor of disproportionately high vehicle miles of personal car use, as well as more energy intensive forms of car choice. Jackson and Marks (1999) reveal that of the 950% increase in expenditure on cars in the previous 40 years, less than half was for increased frequency of travel, suggesting an increased importance of buying more expensive, and therefore powerful cars.

As introduced at the beginning of this section, the decision to own a powerful car is more volitional than how frequently that car is used: changing to a lower-powered car is unlikely to result in any meaningful functional inconvenience and will not require a change in habit. Consequently, the barriers to changing car choice are less structural and instead, are more likely to be psycho-socio-cultural and in the control of the household.

Furthermore, the choice of car can immediately and drastically reduce the emissions impact of the use of the car without any changes in systems, habits or infrastructures. As the highest CO₂ g/km of any car in the UK in 2008 was 500 and the lowest 98 (VCA, 2008), the potential differences in energy use are extremely large. Finally, the choice of car and its general energy intensity is highly visible to others and symbolises the links between income, affluent identities and energy use, therefore changes in this area are likely to result in more immediately impactful socio-cultural shifts than alterations to patterns of use. Therefore, increasing efforts to change the car choice of HIH is likely to be a cost effective way of reducing transport based emissions and will have high social symbolic value in promoting similar shifts in other income groups.

In this thesis large-engine size and high power will be used synonymously as, although it is recognised that they are not absolutely correlated, the relationship is very strong. As with leisure flights, although research which investigates specifically what drives the consumption of high-powered cars by HIH could be

found, the literature was surveyed for indications of the generic drivers of car choice. The most relevant literature focuses on the decisions surrounding luxury or prestigious car ownership, which are related to more powerful cars (Byun and DeVaney 2006). Although the literature surrounding what shapes the ownership of these types of prestigious cars is sparse (Rosecky and King, 1996; Byun and DeVaney, 2006), Byun and DeVaney's (2006) study of the determinants of prestigious car buying indicated that households headed by males, the more highly educated and those with a higher income, will be more likely to buy a prestigious car. In the study, an increase of US\$10,000 a year in income increased the chances of owning a prestigious automobile by 0.3%. Their analysis was based on a national survey of over 3,000 households in the U.S.A with level of prestige based on the 'as new' value of the car. Interestingly, only 2.4% of people owned prestigious cars.

In terms of needs-based drivers for consuming cars, particularly high-powered cars, the relevant literature will be summarised below using the need categorisations of experiential, functional and relational. It is useful to conceptualise the need satisfaction services of high-powered cars as direct and indirect. The direct drivers relate to what need satisfaction services the actual engine size in a car provides, and tend to fall into the experiential category. The indirect factors for purchasing a higher-powered car relate to what high power in a car symbolises. These aspects tend to be experiential and relational and are mediated through the connection between power of a car and how such cars tend to be designed and symbolically connected to needs through marketing. Additionally, there are functional features of a car that are symbolically connected to powerful cars such as size and special features. Finally, there are factors such as economy and environmental impact, which are strongly linked to car choice and are expected to be negatively related to the engine size of the car.

3.3.4.1 Drivers of large-engine car consumption

3.3.4.1.1 Experiential drivers

The joy of driving is a motivation of car choice linked to the power of the car, through its connection to speed and acceleration. Car speed has long been symbolically associated with positive emotions such as fun, freedom and personal power (Gilroy, 2001; Sheller, 2003). Although Barthes, in 1957, talked of a cultural shift from 'an alchemy of speed to a gourmandise of driving' (Barthes 1957: 152), the affective allure of speed has arguably continued. The availability of large-engine car ranges does not appear to have substantially reduced, even in light of regulatory and fiscal pressures, with a trend towards heavier and more powerful cars (Meyer et al., 2007). However, slight relative efficiencies across all car ranges have been achieved (Meyer et al., 2007). Sheller (2003) emphasises the importance of emotive reasons for car ownership, which have in general been overlooked in debates about altering car cultures, and which are mediated through social and cultural contexts rather than being innate. As Sheller put it: 'Emotions are one kind of non-cognitive thought that rides on this ambiguity: seemingly instinctual, yet clearly a cultural achievement.' (p.7).

It is not just the direct experiences of driving a large-engine car that are important as the types of cars that tend to be high-powered evoke strong emotional responses related to needs such as freedom and idleness (Max Neef, 1991). Sports cars, luxury cars and four wheel drive cars often have large-engines and the former are frequently classic cars. These types of cars are commonly connected to notions of fun and excitement and other positive emotions connected to the driving experience (Choo and Mokhtarian, 2004; Bryant and Forsyth, 2005).

High power in a car can also be interpreted as linked to a sense of emotional control and security. Powerful cars can overtake others more easily, which is likely to give a sense of command and safety. Additionally, as higher-powered cars are connected to more expensive prestigious cars (Byun and DeVaney, 2006), they will tend to encompass perceptions of better road handling or 'performance' as well as higher levels of engineering and overall quality of build.

Another aspect of experiential or emotive security would be familiarity and trust in the brand make or model. Although this could be related to small engine as well as large-engine cars, it is equally applicable. The tendency for people to intend to buy a brand that they have already had experience of, is high (Ewing, 2000).

As well as joy and a feeling of being secure, a hobby interest in cars can also relate to high-powered brands of cars. Particular types of car attract hobby interests, particularly classic cars with associated owners' clubs and rallies. As an extension of this, the car can also be used as a collector's item, which leads to a larger quantity of cars being purchased, although presumably driven infrequently.

The interest in owning and collecting 'classic cars' is likely to be more prevalent in HH due to the expense of owning, maintaining and insuring them (Tam-Scott, 2009). Although not always related to higher-powered cars *per se* cars, which are expensive or prestigious are often the focus of hobbies. Tam-Scott (2009) emphasises the emotional and experiential aspects of owning or collecting classic cars, as well as the social and cultural implications. Furthermore, he emphasises the counter logic to owning such a car in that: "To these individuals, the ideal car is likely uncomfortable, uneconomical, unreliable, and may or may not have sufficient space for the occupants, let alone their personal effects that might take the form of luggage" (p.106).

3.3.4.1.2 Functional drivers

Giddens (1991) has suggested that protection needs are in fact greater than physical needs, such as hunger and thirst satisfaction. Safety is shown to be one of the key physical features that people look for in a car (Hiscock et al., 2002; Schultz, 2006). Higher-powered cars are often associated with greater safety features, as expense is perceptively related to quality. For example, the Hummer which is a very large and expensive car, is based on combat vehicles (Schultz, 2006) with an engine size ranging from around 3.5 to 6.6 litres. In his study, Schultz identified safety, in the sense of being secure from outside threats, to be an important feature of purchasing the Hummer H2. Women cited safety most often, with one

woman stating that she “no longer feared for her life the way she did when she was driving ‘small cars’” (Schultz, 2006:66). Linked to safety, reliability is another highly sought functional aspect of a car, minimising the chances of being stranded in a broken car, or a car breaking down while driving, are minimised. Additionally, ‘peace of mind’ security is provided by a reliable car as it doesn’t need so much time and monetary attention.

A further aspect of security that is related to a car is if it is able to cope with many different terrains. For example, in Schultz’s study an exemplar statement was ‘no matter what happens in this town [LA] – earthquake, fire, civil unrest, flood, I can get through it, under it or over it.’ (Schultz, 2003:66). This can be seen as evidence for Hirschman’s (1990) conclusion that affluence and affluent products, such as cars, are connected with mastery over nature. Increasingly, dramatic weather, possible as a result of climate change, is likely to increase the need for this feature. This is significant because all terrain vehicles, or Sports Utility Vehicles (SUV), often have large-engines and have become the focus of the environmentalist attacks on the car.

Car comfort is something known to influence vehicle consumption (Jensen, 1999; Hiscock et al., 2002), although its importance is variable (Hiscock et al., 2002). Comfort may be defined as the space or form of the interior or how it drives. Related to comfort is the provision of special features and accessories, many of which are increasingly provided as standard in more prestigious cars, such as air conditioning and electric windows, and others, which are optional. As these features could be considered in-car ‘gadgets’, this aspect would be expected to relate to a materialistic value orientation. In-car features have been shown to be a positive influence on car purchase (Hiscock et al., 2002). These could be seen to be related to larger engine cars via the relationship between prestigious cars and features, and expensive cars and large-engines. Again, a comfort related aspect, but also associated with logistical issues of transporting goods, people or animals, space is known to be an important consideration for many car buyers (Jensen, 1999). The importance of space will be dependent on stage of life and lifestyles which structures what items are considered important to transport.

Two further functional aspects of choosing a car are its economy and its environmental impact. Firstly, choosing a car that is economical in either the initial outlay, or in running costs, could be seen to be inversely related to the power of the car, because in general, the greater the power of the car the more fuel it uses and the power of the car is related to the cost of the car, as referenced in section 3.2.4. However, this hypothesis has not been tested. Secondly, the environmental impacts of car ownership have become more socially salient in recent decades and the impact of this on car use and ownership has attracted research attention (Jensen, 1999). As more powerful cars tend to be more environmentally damaging, it would be expected that attention to the environmental impact of a car would be a hindrance to powerful car ownership.

3.3.4.1.3 Relational drivers

Identity and status are areas of car choice motivation that have received the most research attention, although this tends to be more theoretical than empirical. The importance of consumption to identity and status, as interpreted for this thesis, has been outlined in Chapter Two and will be considered in more detail in Chapter Four.

Identity coherence, either with the actual or ideal self, is highlighted in the literature as a key aspect of car buying. The car has long been recognised to be a highly symbolic good, which is an extension of self in social and cultural contexts (Levy 1986). Drawing on Katz and Thrift, Sheller (2003) provides a view of the car as a seamless extension of identity. She notes that Katz believes that driving a car “requires and occasions a metaphysical merger, an intertwining of the identities of the driver and car that generates a distinctive ontology in the form of a person-thing, a humanized car or, alternatively, an automobilized person” (Katz, 2000:33) in which the identity of person and car kinaesthetically intertwine. (Thrift 2003:7). Birdwell, in an early piece of empirical research into car ownership, argues for acceptance of the hypothesis that “an automobile owner's perception of his car is essentially congruent with his perception of himself.” (Birdwell, 1968:82).

Most critically, for this thesis, is that researchers such as Hirschman have found that “the self symbolized by automobiles was characterized by high-performance technology and powerful engineering” and that this is related to the ideology of affluence (Hirschman 1990:40). Much of the symbolic connection between self and cars is couched in a discourse of gender (Sheller 2003; Gartman 2004). This is most apparent with the SUV which is overtly masculine in its design and branding and at the same time overtly connected to power and affluence. However, according to Sheller, this masculinity is a symbolism demanded by females as well as males: “the ‘masculine’ appeal of the SUV has attracted working mothers in particular, as they cultivate a high-achieving public persona in the workplace.” (Sheller, 2003:15). Other writers talk of a different gender structuring, with larger, powerful, expensive cars being feminised and smaller, cheaper more functional vehicles being masculinated through marketing (Gartman, 2004).

Desirable aesthetic qualities, high price and the perception of high quality engineering are all aspects of a car that are considered to be symbolically connected to identities of power and wealth (Gartman, 2004). The view of expensive cars as objects of beauty is something that has long been established, and Gartman argues is based on fundamental gendering of class structures as posited by Bourdieu (1984), where the bourgeoisie were seen as feminine due to their abstraction from the world of work, and the lower class seen as masculine. The literature also points to this femininity being connected to the sexualisation of the car, “objects of desire to be collected and cosseted, washed and worshipped” (Sheller 2003:6). Sheller sums up that “Whether phallic or feminised, the car materialises personality and takes part in the ego-formation of the owner or driver as competent, powerful, able, and sexually desirable.” (Sheller, 2003:6)

As the previous quote expressed clearly, identity and status come together within the realm of the car. However, it is useful to consider more specifically status and its connection with identity in terms of car choice. Identity and status are connected, because the notion of being higher status is something brought in to the actual or ideal identity, particularly the affluent identity, as outlined in Section 2.3.1. Therefore consumption occurs around products that symbolise this higher

status identity and therefore provide psychological self-congruence (Mick and Buhl, 1992). The links between status and consumption have been strongly expressed in the context of physical goods such as cars, and less so for experiences and services. This may be because cars, as physical goods, can be judged to communicate symbolism more visually and therefore more conspicuously and effectively. The role of cars as symbolic objects is so important that many view the choice of car purchased to be as much about social interaction as function (Byun and DeVaney, 2006; Fan and Burton, 2002).

A car can convey superior status in a number of ways, the exact formula of which depends on specific symbolic landscapes drawn from different lifestyle contexts. For example, the professional and social status may be different realms, based on different identities. As such, they may require different types of symbolism and therefore different types of cars. As wealth, status and scarcity are highly related, in conveying status, the car must attract the right kind of attention because of its relative (yet socially relevant) uniqueness. This distinctness can arise from its physical appearance, or beauty, as described above, or most relevant to this study, its greater power. For example, being able to overtake somebody easily is an embodied form of status enforcement.

3.3.5 Durable consumer products

One of the reasons that new durable products are relatively energy intensive is that, in theory, they are designed to last for prolonged periods of time and, as such, often involve the use of relatively high amounts of natural resources to withstand wear and tear. However, in recent years the increase in turnover of these products has accelerated as people dispose of and replace products either for fashion reasons, because the technology is not up-to-date any more, or because the item has broken and repair is not carried out. Data indicate that 100 million mobile phones and 300 million computers are discarded every year in the U.S.A, and that whereas 20 million televisions are sold, only 20,000 are repaired (Guiltinan, 2009).

Part of the reason for this is the advance of changing technologies or platforms that render previous manifestations socially or functionally obsolete in a short period of time. For example, when digital and flat screen televisions were introduced, an estimated 163,000 televisions and computers became obsolete per day in America, with only a small percentage expected to be recycled (De Graff et al., 2005). Although recycling levels have increased, the process of extracting useful materials is environmentally risky and one that is often outsourced to poorer countries (Guiltinan, 2009).

The shift to disposable durable products may not be a completely energy intensive progression. The expectation and demand by consumers for shorter product lives means products are not built for durability as previously (Waldman, 1993). As such, their embodied energy is likely to have reduced over time as fewer material and other inputs are used. Additionally, increases in energy efficiency mean that, on occasions, it is a positive action to replace an old durable product for a new one, for example, replacing a pre-1994 freezer (Chul Kim et al., 2005). However, although this applies in some cases, to some products, the large quantities of electronic waste and other products disposed of, amounts to a highly energy wasteful system which is a result of 'consumer culture' and an inefficient linear system of production. Shifting from a linear to a circular economy, using industrial ecology principles (Socolow, 1996; McDonough and Braungart, 2002), is vital in

reducing the impact of consumption, however, at the same time the role of the consumer culture and the need to embrace re-use is also necessary (Redclift, 1996).

The consumer culture or consumerism, is not simple to define due to the theoretical divergence of the topic (Trentmann, 2004), however, one of the key interpretations is of consumption culture as “a societal disease characterized by an insatiable desire for material possessions” (Droge et al., 1993:34) (Bell, 1976; Galbraith, 1958; Lasch, 1979; Marcuse, 1955). Others such as Stearns, simply summarise it as ‘the lure of material goods’ (Trentmann 2004) Therefore conceptually there is a strong connection between consumerism and materialism (as discussed in Section 2.2.4.2).

As the category of new durable products encompasses an extremely wide range of products, it is not feasible to analyse the drivers in a behaviourally focused way, structured around experiential, functional and relational categories, as was the case for leisure flights and cars. There are two possibilities for assessing environmentally relevant needs-based consumption decisions which can cover a wide range of durable products: Firstly, the decision to buy products rather than abstain from buying and, secondly, the choice to buy new versus buying second-hand goods. The buying versus not buying decision involves highly contextual information. However, the decision to buy new versus second-hand does not require an understanding of the circumstantial basis for buying a washing machine or clothes, but rather the psychological and psycho-socio-cultural need satisfaction that ‘newness’ might provide and used products might not.

Additionally, from a social marketing perspective, there may be more possibility of shifting H1H towards older products than eliminating consumption entirely. This makes the focus on ‘newness’ a practical topic to explore and additionally, it is considered an important yet under-unexplored topic (Shove and Warde, 1998). As the choice between new and old is dichotomous, constraints to second-hand product consumption are interpreted as drivers of the consumption of new products. The desire for newness, as understood within the consumer literature, is

likely to be related to higher levels of consumption *per se*, as well as a reduced attraction to older products. Although not everyone can engage in buying second-hand products, as there would eventually be no fresh input of new products, the market 'recycling' possibilities are large. Moreover, if demand for second-hand, including repaired products increased, it would further encourage people to resubmit their old products to the market rather than sending them to landfill. The relevant concepts that may underpin the desire for new product consumption will now be explored.

3.3.5.1 Drivers of new product consumption

3.3.5.1.1 Consumerism, excitement and newness

The desire for 'newness' is a core feature of social-psychological analyses of consumerism and consumer cultures. Csikszentmihalyi and Rochberg-Halton (1981) for example, emphasise the excitement and passion for newness in American culture by describing it as "based largely on goals of novelty for its own sake, pure individuality, and the passion to possess people and things briefly" (1981:240). Droge et al. (1993) place continual obsolescence and introduction of the new as one of the three pillars without which a consumer culture could not exist.

Some attribute this to advertising and the economic drive for planned obsolescence or 'creative destruction', as attributed to Schumpeter, whereby creativity destroys the old, giving rise to the demand for new and therefore creating vibrant consumer markets. The obligation of the advertising industry to support this has resulted in an acute focus on the importance of the 'new' in media promotions (Shove and Warde 1998), which, in turn, become symbolically important in people's representations of their ideal self identity. However, as well as many disputing this interpretation of Schumpeterian economics, rather than merely a commercially orchestrated effort, an alternative reading of the demand for newness is humans' need for stimulation and excitement (Droge et al. 1993), which those on even modest incomes can support.

Shove and Warde summarise how social-psychological accounts of consumption rest on an explanation of the purchase of new products and pleasures “because they are stimulating; to play new games, try out new items, explore new material objects, learn new tastes, all these are ways of averting boredom” (Shove and Warde 1998:6). Others still present a more pathological description of consumerism and the desire for newness. For example, Trentmann describes Marcuse’s concern for the emergence of “‘one-dimensional man’ consumed by a compulsive desire to purchase goods” (Trentmann 2004:10). Given the connection between consumerism and newness, and consumerism and materialism, it would be expected that there would be a stronger link between the desire for newness and levels of new durable product consumption, than between materialism and leisure flights or car consumption.

3.3.5.1.2 Matching

The inclination to purchase products that match has been presented as one key driver for new products and therefore is significant to issues of sustainable consumption (Shove and Warde, 1998). McCracken’s 1988 book chapter entitled ‘Diderot unities and the Diderot effect: Neglected cultural aspects of consumption’ is the basis for this position by Shove and Warde. In the chapter, McCracken describes the eloquent musings of Denis Diderot the 18th Century French Enlightenment philosopher, who notes how his study was transformed from “crowded, humble, chaotic, and happy” to “elegant, organised, beautifully appointed, and a little grim” and this, he attributes, to replacement of his old dressing gown, which led to all other items gradually being changed to match. McCracken describes the inclination to consume products that in some way symbolically match each other as ‘Diderot unities’ or ‘the Diderot effect’. McCracken (1998:127) notes that ‘the Diderot effect has clear “ratchet” implications for consumer expenditure. It helps to move the standard of consumption upward and prevent backward movement.’ Not only does the Diderot effect provide a continuous up-scaling momentum to consumption, but it arguably preferences the new over the second-hand because the possibility of finding a product that fits with others is limited compared to choice available in the new market.

What is unclear is whether seeking items that match varies between different types of people, or, if it is to be interpreted as a fundamental human instinct. Some clue for this is given by Shove and Warde, who, drawing on Bourdieu, extend the implications of the concept further by arguing that the desire for matching is likely to be related to the entirety of a person's possession, and even behaviours – in other words their lifestyle. Therefore “not only should the dressing gown match the armchair, but it should also be symbolically consistent with automobile, vacations and concert-going.” (Shove and Ward 1998:7). Furthermore, they refer to Featherstone's postmodern philosophy of identity and consumption which suggests that several matching sets would be needed for every identity held.

From a socio-cultural perspective, identity is at the heart of the Diderot effect, if matching is seen as a qualitative assessment of possessions that must provide coherence in relation to the possessor. From this possession, mere replacement of products for new would have to be consistent with someone's identity and therefore it would be expected that those with environmental values or identities would experience discord in such an act. However, Diderot's own repulsion at the effect suggests this might not be enough to limit the action. Additionally, those who place greater emphasis on self-enhancement and rely more on material goods for psychological wellbeing would be expected to be more focused on matching. On this basis, referring back to the theoretical orientations presented in the first part of this literature review, those who are more self-enhancement orientated (with egoistic and materialistic values, and an affluent identity) would be theoretically expected to be more concerned with matching than those with self-transcendence orientations (biospheric, altruistic values, environmental concern and an environmental identity).

3.3.5.1.3 Identity and new versus old

The links between identity and consumption are well established, as outlined in Chapter Two and described above, however, the links between identity and the consumption of the 'new' has not received the same attention. If newness is something that drives consumption and is related to consumerism and materialism,

then it is reasonable to expect that this will be related to newness being part of someone's actual or ideal identity. Fashion, as defined by Lauer and Lauer (1981:23) as "simply the modal style of a particular group at a particular time... the style that is considered most appropriate or desirable", is the system by which 'new' is institutionalised and endowed with positive qualities such as social relevance and sexual attractiveness.

If someone sees themselves as the type of person who is 'up-to-date' then they are likely to follow the advice of the fashion industry and the associated requirements for new products. This would, at the same time, be expected to restrict the purchase of older products which are less immediately relevant, with the exception of the notable resurgence in original vintage clothes, in particular. As well as a functional issue of older products not being up-to-date, there is also the issue that the polarity of new and old may mean that those who see themselves as 'up-to-date' would actively see themselves as not the sort of person who buys used items.

Although HH are likely to have the money to exercise any identity that they hold through consumption, there is no indication in the literature that those with more wealthy lifestyles are more likely to be focused on fashion than those with less money. Indeed the heuristically observed tendency for those in the upper classes, certainly within the older age group, to wear good quality classic clothes for long periods, would indicate that certain HH will have lifestyles that tend to reject an up-to-date identity.

3.3.5.1.4 Quality and second-hand

As well as the desire for new, there may be reputational rather than identity issues with older products that may restrict their consumption. The fact that second-hand products have normally had wear, may be associated with inferior quality and be applied to the second-hand category in totality. The fact that the design and build of certain second-hand products may ensure their continued use beyond a newer, cheaper product that can be purchased for the same price, may not be part of the social discourse of particular groups such as HH. The relationship between used

goods and lower quality may be a physical one, but may also be symbolic. In accordance with identity theory (see Section 2.3), the wear of a product may be seen as a reflection of self-identity or projected onto others who buy used goods, and therefore something to be avoided.

3.3.5.1.5 Relationships with older products

One factor that may provide a positive spur for the purchase of used goods by HH is the strong connection between used goods and artefacts of antiquity that represent wealthy lifestyles and contain positive emotional symbols. Shove and Warde (1998) describe how older items can be specifically valued because of their age. In terms of consumption, this may drive the demand for products that embody sentimental value because of they come from a particular era, or for the novelty value of 'new' in the context of the rediscovered past. McCracken (1988) refers to the fact that in the early modern era, people would value products with obvious signs of use from revered others. This connection between the old and the symbolically positive would be expected to be highly relevant to some HH. It is unclear if this sentiment is opposed to or compatible with a desire for the new.

3.4 Constraints to increased consumption

Although energy consumption by HH tends to be relatively high, and financial barriers to consumption are smaller than for most people, there are physical or psychological factors that will reduce the actual consumption levels, which would have otherwise occurred. Although there are some factors that will affect all people in a country, for example, the recent global financial crises and related recession, of most concern to social marketing, are those which are likely to relate to the specific circumstances of groups of people, such as lack of available time, or disapproval from friends. These can be seen as providing inhibiting effect on the fundamental need motivations, therefore, if these constraints are removed, consumption can be expected to rise to the underlying desired level.

Understanding constraints to consumption is important for achieving sustainable consumption because, as outlined in Chapter One, "The most fertile ground for intervention and policy making may well lie in finding ways to elaborate or bolster

existing constraints on consumption, rather than in creating new ones or manipulating incentives” (Wilk, 2002:10). Social marketing, which can intervene in symbolic meaning creation, is therefore useful, not only to create new symbolic connections between needs and consumption, but also to reinforce existing barriers to consumption. Although many constraints will be inter-related, each consumption practice will also attract certain constraints that are specific to them, for example, fear of flying may be a constraint to leisure flights and this is not applicable to other practices. However, it is useful from a practical and theoretical position to focus on a more generic level where constraints are likely to be applicable across a number of different practices.

3.4.1.1 Time and money

Time and money are the most obvious physically constraining factors on consumption. They can be seen as having quantitative and qualitative effects on demand, because, as well as directly reducing the levels of consumption which would otherwise have occurred over a sustained period, a scarcity of time and money has the potential to alter the fundamental ability of an economic good to satisfy a certain need, as connections between needs and satisfiers are changed, as will be discussed in more detail in Chapter Four.

As this study is looking at HIH, it is hypothesized that in general money will be less of a constraint than time. However, this is likely to vary by consumption practice. Taking a holiday is a more time involved process than deliberating about and making a one-off car purchase. New durable product consumption falls somewhere in the middle, with shopping considered a time intensive pursuit (Ackerman, 1989). Financially, cars are likely to be the most expensive one off purchase, although new durable products over the same period of which a car is consumed may require a similar monetary investment. Holidays involving leisure flights, vary considerably in price but are also relatively expensive to consume and may cost more than a car, depending on the type of consumption.

However, the perceived constraints that time and money pose will depend much on the desired level of consumption and how far this differs from current consumption.

In turn, this is likely to relate to the psychological orientation of the individual (self-enhancement versus self-transcendent) as well as socio-demographic factors such as age (has a prior level of durable products already been accumulated) and gender (what are the social expectations around levels of consumption). It is likely that given the cultural importance of expensive cars, exotic holidays and high levels of new products that the desire for increased consumption will be high and therefore, the constraints of time and money important for all three consumption categories, although in varying levels.

3.4.1.2 Conflict with values and identity

As outlined in Chapter Two, values and identity structure consumption in important ways. Although a gap between values, identity and action may result from a subconscious discord, if a need for higher levels of consumption exists, and yet self-transcendent orientations are consciously held, then these should theoretically provide a constraining force on levels of consumption. For example, an individual may feel the need for more holidays abroad, but their environmental values consciously stop their consumption of them. However, it is possible that these psychological restraints may not be held consciously and yet are exerting a restraining influence. There is also the likelihood that for some people, they are aware that their consciously held values do not act to constrain consumption. The potential of a consciously held gap is somewhat supported by DEFRA research (2007b), which concluded, that for most of us, even those with environmental values, our holiday is something of a 'sacred cow' to which people will not apply values in the way they do other areas of consumption.

3.4.1.3 Normative disapproval

Whether or not an individual judges their values or identity to be constraining their consumption, they may feel that the values and identities of significant others, which will influence normative disapproval, may be restraining their consumption. Subjective norms are an important psychological construct which are known to affect behaviour (Blake, 1999) and have been most popularly utilised within Ajzen and Fishbein's Theory of Reasoned Action (Ajzen and Fishbein, 1980) and Ajzen's Theory of Planned Behaviour (1991). Subjective norms are defined as "one's

understanding of what salient other people expect one to do (in regards to a particular action) and one's willingness to accept those expectations" (Olsen 1981:119).

3.4.1.4 Stage of life

Life stage has long been identified as an important shaper of consumption behaviour (Wells and Gubar, 1966). The influence of life stage has also been specifically noted in relation to tourism demand (Lawson, 1999; Opperman, 1995), cars and product consumption (Wells and Gubar 1966; Giuliano and Dargay, 2006). Although life stage indirectly affects other factors such as time, money and possibly psychological orientations, life stage may also provide a direct and conscious constraint to consumption through, for example; the existence of children, which may restrict the size of car or the number of holidays taken; the lack of social companionship for holidays that older people may face; or physical restrictions that come with older age, for example, restricting the ability to drive or fly.

3.5 Conclusions of the chapter

This chapter highlighted that leisure flights, energy heavy car choice and new durable product consumption are three consumption categories that are environmentally-significant for HIH. Leisure flights and energy heavy car choice are both important to reducing direct energy consumption, whereas new durable product choice is an indirect energy category. Although indirect energy is more complex to measure, and new durable products form a broad category, the significance of indirect energy for HIH and the often neglected role of indirect energy, indicates that it is a valid topic for research. These three consumption categories are also likely to be strongly physically volitional for those with higher incomes and therefore appropriate categories for intervention through social marketing.

As outlined in this chapter, identifying needs that drive consumption is one of the key ways 'customer insights' can be formed for social marketing. This chapter has

begun this process by considering the most important needs-based themes from the literature on leisure flights, energy heavy car choice and new durable product consumption. Additionally, certain key constraints that may influence all three consumption categories have also been highlighted.

CHAPTER FOUR

A psycho-socio-cultural approach to consumption behaviour and social marketing

4 A PSYCHO-SOCIO-CULTURAL APPROACH TO CONSUMPTION BEHAVIOUR AND SOCIAL MARKETING

4.1 Introduction

The preceding chapters outlined the psychological orientation approach and the social marketing approach to behaviour change, both of which will be utilised for this research. Some differences between these approaches have been introduced in the above chapters. However, this chapter will analyse in more detail how and why these two approaches have often been polarised within debates around solutions to unsustainable consumption. This chapter will argue that the polarisation is based mostly on the interpretation of social marketing employed, which is predominantly based on the individualistic rational economic approach to behaviour which has dominated marketing theory. Specifically, this means that social marketing is not considered to have either the power or the responsibility to influence people's underlying psychological orientations. As such the goal of social marketing is generally considered to be about volitional change based on understanding and working with existing structures of values and identity. Consequently, the social marketing approach has been charged with emphasising pre-existing psychological orientations, such as materialism, in the pursuit of short term behavioural-based change, which actually serves to undermine longer term sustainable consumption (Crompton, 2008).

This chapter will suggest that these approaches can be unified by moving beyond an individualistic and rationalistic approach to behaviour change and instead towards a postmodern approach to consumption that emphasises the psychological, social and the cultural realms, in shaping consumption in an interrelated way. At the same time, by utilising a psycho-socio-cultural perspective there is also scope for understanding the role of income on ESC from a more sophisticated standpoint than the rational approach, where the role of income on consumption is central, yet highly constrained (see Chapter One for details).

Through a psycho-socio-cultural theoretical lens, the role of symbolic meaning of products and services in structuring society and providing psychological coherence, is emphasised. The systems of symbolic meaning guide, not only how needs are connected to economic objects in a given cultural or social context, but also how different psychological orientations are interpreted to be connected to different consumption practices, and how desirable these orientations are. As marketing is significant in creating and maintaining these symbolic meanings, it necessarily plays an important role in defining and promoting different values, and cannot play a neutral role, where it merely utilises existing orientations as tools. Consequently, this chapter will argue that, although criticisms against the marketing approach to sustainable consumption are perhaps justified, given current dominant interpretations of social marketing, they are not justified against social marketing as a tool within an emerging postmodern definition.

In addressing the above topics, this chapter will outline the psycho-socio-cultural approach as the theoretical lens used to guide the design of this research and to guide how the customer insight findings of the research are interpreted within a stated social marketing frame.

4.2 Differences between the psychological orientation and social marketing approaches to sustainable consumption behaviour

There are a number of ways in which the psychological orientation approach and the social marketing approach to sustainable consumption interventions differ. The psychological orientation approach focuses on promoting or inhibiting certain kinds of orientations depending on whether they are shown by research to result in behaviour that is beneficial or destructive to the environment and society. As a result, the focus of the interventions drawing from this approach are, for example, Education for Sustainable Development (ESD) (Sterling, 2010), awareness raising (ECLAC, 2000) or open dialogue with society (Crompton, 2010). The social marketing approach on the other hand, takes the specific behaviour and not the

psychological orientation as its key focus. Interventions are geared around making the desirable behaviour as easy as possible and the undesirable behaviour as difficult as possible.

Although social marketing is considered an important approach for increasing the sustainability of consumption by many practitioners and policy makers, there has been a notable increase in criticism of the social marketing approach by those supporting the emphasis on psychological orientations. The social marketing approach has been charged with being both ineffective and even potentially counter to the goal of sustainability (Crompton, 2008; Crompton and Kasser, 2009; Crompton and Thøgersen; DEA 2010).

These critiques are based firstly on social marketing's behavioural approach. The approach is interpreted as being about "motivating specific change, on a piecemeal basis." (Crompton, 2008:5). It is asserted that this will only result in changes to specific behaviours alone and that these new behaviours are unlikely to be sustained because changes are based on situational, rather than psychological drivers for change. Although evidence has shown that changes in behaviour in one area can 'spill over' to other and more ambitious behaviours (Bem, 1967, 1972), Crompton and Thøgersen (2009) draw attention to evidence that this is predicated on the existence of psychological orientations, such as environmental values, hence if these values do not exist then spill-over is unlikely to occur.

Additionally, the change in behaviour may, in fact, have a neutral or negative overall effect due to the significant risk of rebound effect. This is because evidence suggests people may reduce environmental impact in one area, only to spend the money saved on environmentally impactful behaviours in another, often more damaging area (Crompton, 2008). This is believed to happen primarily because an appropriate psychological orientation to deter such action does not exist (Crompton, 2008). Instead it is argued that by intervening at the psychological orientation level, change will be more likely to be sustained and to transfer across behavioural domains. However, this proposition would appear to rely on evidence that certain pro-environmental psychological orientations do, in fact, result in

sustainable consumption behaviour and that this translates across behavioural domains. Secondly, it is based on the assumption that financial success, materialism and other self-focused orientations are incompatible with pro-environmental values and also that they are significantly widely held within populations to make them worthy of concern. As Chapter Two outlined, the evidence on these points is not conclusive.

Another core criticism about social marketing is that it considers psychological orientations, such as values, only to the extent that this will help 'sell' behavioural propositions. For some, the defining feature of social marketing for sustainable consumption is about an "appeal to people's self-interest in order to 'sell' sustainability" (Power, 2011). This canalisation approach, is criticised not only because it contributes to a focus on small behaviours that are easy to market, but also that this ignores the importance of engaging at the level of psychological orientations: "it does not seek to engage or influence people's values and attitudes. Social marketing involves segmenting the public and working with existing values". (DEA, 2010:2).

Crompton suggests that "marketers (and campaigners who follow a marketing approach) are not particularly concerned about *what* values they promote in the course of trying to motivate people to buy a product (or adopt a particular behaviour)" (Crompton, 2010:26). Shove further argues that social marketing-type approaches "encourage consumers to make 'the environment' their preferred brand". (Shove, 2003:6). As a result of the disengagement with values, and other relevant psychological orientations, some suggest that social marketing may be inappropriate to sustainable consumption because "sustainability...is absolutely shot through with debates around values". (DEA, 2010)

A further serious criticism directed at social marketing for sustainable consumption is that its use of, but not engagement with, psychological orientations means it may actually promote increased environmental impact in the long run. This is because the psychological orientations social marketing utilises are those such as status and financial success which are shown by some to be oppositional to pro-

environmental behaviours (see Chapter Two for details). Therefore Crompton suggest that “such approaches may actually serve to defer, or even undermine, prospects for the more far-reaching and systemic behavioural changes that are needed.” (Crompton, 2008:5). This view is supported by the DEA (Development Education Association) which states that: “there is evidence that social marketing may embed precisely the sorts of values that prevent us making progress towards sustainability” (DEA 2010:2).

These important criticisms of social marketing imply that consideration should be given to abandoning it as a strategy for change, with a psychological orientation approach a more fruitful long-term avenue. However, the seemingly intractable division between a psychological orientation approach and social marketing, as presented above, would appear to rest on a specific interpretation of social marketing, as one which does not concern itself with challenging or influencing psychological change but merely working with existing orientations.

The next section will outline why this is a valid contemporaneous interpretation based on the theoretical ambiguity of social marketing and the resulting default position of the dominant rational economic approach to behavioural change.

4.3 Theoretical ambiguity within social marketing

Social marketing had been criticised on a number of occasions for not utilising theoretical approaches in a robust way (Wallack 2002; Nicholson and Xiao 2010). Specifically Nicholson and Xiao note that in the leading text book in the field, *Social marketing: Influencing behaviours for good* (Kotler & Lee, 2008), there is “not a single reference to any behavioural theory, despite its title, focusing instead upon the adaptation of traditional marketing management concepts within a socially relevant context”. (Nicholson and Xiao 2010:2). Reflecting this, the Social Marketing Centre for Excellence suggests taking an ‘open analysis approach’ initially and then essentially drawing from perspectives and theories appropriate to the problem context (French and Blair-Stevens, 2005). Figure 4.1 outlines the numerous influences on behaviour that have been identified (2005).

Figure 4.1 Influences on consumer behaviour



Source: French and Blair-Stevens, 2005

French et al. (2010) further provide an overview (Figure 4.2) which indicates twelve ways in which social marketing can be viewed varying from more of a mind-set to more of a practical tool. Furthermore, they note that this is “not intended to be exhaustive and that, in reality, social marketing can be any or all of the featured approaches” (p.30)

Figure 4.2 Approaches to social marketing



Source: French et al., 2010

Encouraging researchers to apply the most appropriate theory to the situation mirrors a Pragmatic approach, which is the lens used for this research (see Chapter Five for details). French et al. (2010:30) state that “seeking a definitive approach to social marketing is one of the ‘bear traps’ that some writers or commentators have fallen into”. As such, social marketing is positioned as a frame within which theoretical positions must be built, depending on the context. This appears sensible in some respects, as different perspectives and factors will be more or less relevant, depending on the consumers, the behaviour in question and the discipline base of those who are applying the social marketing. Jackson also points out that each model of consumer behaviour “arises from a slightly different set of disciplinary assumptions, adopts sometimes radically different underlying assumptions about human nature, and embodies different conceptions of what it means to pursue the ‘good life’.” (Jackson 2004b:4).

However, how consumers are theoretically perceived and researched is critical to the resulting intervention and therefore must be made explicit. French (2008) makes clear that the fluidity of the concept of social marketing must be married with an understanding by the implementer of “how they are approaching it, are aware that it can be approached in different ways and are as clear as possible about this in their discussions with others” (2008:30). Similarly, as will be discussed in Chapter Five, Pragmatism increases, not diminishes, the obligation on the researcher to choose and apply an appropriate methodology. However, in reality, the lack of theoretical guidance for social marketing could be seen to inadvertently resulted in a default position of applying the dominant rational economic theory, which has historically been central to marketing theory. This, in turn, can be seen as a primary reason for the strong critiques about social marketing from the environmental NGO field, as discussed above. As such, the polarising position between a psychological orientation approach and social marketing appears to be the result of ambiguity, rather than any meaningful theoretical conflict.

4.4 Exchange theory and social marketing

The connection between social marketing and the rational economic approach is particularly expressed through the importance of exchange theory to marketing and social marketing. Exchange theory is an individually focused approach with its foundations in psychology and economics (Houston and Gassenheimer, 1987). As well as being central to the rational approach, it is intricately connected to behaviourism, which in turn is the main basis of behavioural economics, or 'nudge' (Curtis, 2010). Therefore exchange theory can be seen as providing a significant theoretical thread between historically and contemporarily dominant consumer behaviour approaches and interventions.

Although increasingly challenged by postmodern perspectives (Fuat Firat and Dholakia, 2006; Peñaloza and Venkatesh, 2006) and a service-dominant logic of marketing (Vargo and Lusch, 2004), exchange theory, in the past, has been so vital to marketing that it has been proposed as a contender for theoretically underpinning the discipline (Bagozzi 1975). Despite being sometimes critiqued in a social marketing context, it is widely applied within social marketing definitions. For example, Bryant states that "Social marketing relies on commercial marketing's conceptual framework to guide program development and implementation. This framework places consumers at the center of an exchange process in which they act primarily out of self-interest" (Bryant 2002:1), a view echoed by others such as Goldberg (1995) and Hastings and Saren (2003). Kotler (2000 in Hastings and Saren 2003), talking explicitly about social marketing and the central role of exchange, suggests that there are five prerequisites to exchange:

- There are at least two parties.
- Each party has something that might be of value to the other party.
- Each party is capable of communication and delivery.
- Each party is free to accept or reject the offer.
- Each party believes it is appropriate or desirable to deal with the other party.

Hastings and Saren further underline the generally held view of exchange being voluntary and conscious, and therefore rational.

The importance of needs to marketing is also encompassed within exchange theory, which assumes that “we are need-directed beings with a natural inclination to try and improve our lot” (Hastings and Saren, 2003:309). As discussed in Chapter Three, needs are central to marketing as the principal motivation for consumption (Crompton, 1979; Gibson & Yiannakis, 2002; Schiffman and Lazar Kanuk, 2007), and within exchange theory these needs are interpreted as being situated with the individual, or, as Wilk puts it, from an individualistic perspective: “Needs are produced internal psychological and cognitive processes, leading to choices within a marketplace of possibilities” (Wilk, 2002:6). Within the rational economic approach, what drives particular needs is “exogenous to the model – that is to say they are taken as given without further elaboration as to their origins or antecedents” (Jackson, 2005:vii). Instead marketing efforts are generally based on discovering what these needs are and then fashioning products to suit them, rather than discovering or altering the underlying psychological orientations that create these needs (Kotler and Zaltman 1971).

Ultimately, the importance of exchange theory and the notion of individualised voluntary action and self-interest within many social marketing definitions, means that even if potentially any theory can be used to design research, the *de facto* view of consumption is rational choice.

Goldberg’s (1995) critical assessment of social marketing, as essentially focused on downstream marketing, draws out the issues in more detail. He notes that downstream marketing involves an: “emphasis on changing individual behavior within a given social system” and is therefore within the structuralist-functionalist ‘conservative’ paradigm. He goes on to quote Gouldner’s (1970) view of such a paradigm as treating “the institutions of its own surrounding society...as given and unchangeable in essentials; proposes remedies for them so they may work better rather than devising alternatives to them; foresees no future that can be essentially better than the present, the conditions that already exist; and explicitly or implicitly counsels acceptance of or resignation to what exists rather than struggling against it...Functionalists are not Pollyannas who see no fault in the status quo. But neither

do they see any possibilities of a future significantly different from the present.”. Goldberg goes further in stating that social marketing mirrors mainstream media’s view of society as attributing problems to individuals, rather than the social or cultural fabric of society. Social marketing is therefore perceived to be limited to serving existing structures, rather than creating the new ones necessary for radically different ways of consuming and behaving.

Ironically, it is recognised that the basic view of the consumer as a rational economic actor has held back social marketing campaigns from being successful (HM Government 2005, Sustainable Consumption Roundtable 2006; Wellings *et al.* 2006; DEFRA 2007a). This is because the view of the consumer as a rational actor will always tend towards interventions which increase information to enable rationality to be maximised for optimal self-interest. Therefore, although it has been observed that many campaigns consider themselves to be ‘social marketing’, in reality they tend towards social advertising or social communication, with an emphasis on large, often expensive advertising campaigns (Fox & Kotler, 1980; Wellings *et al.*, 2006).

In an independent review of UK Government campaigns it was noted, “The view of social marketing as synonymous with advertising campaigns aimed at individual behaviour change is still prevalent.” (Wellings *et al.*, 2006:10). Drawing on a range of literature, Hobson notes that viewing consumption issues as essentially a knowledge deficit problem is a perennial issue (Hobson, 2002). She further equates this approach with social marketing and its subsequent ineffectiveness (Hobson 2001). Given the rational approach to consumer behaviour that tends to dominate social marketing, the narrow interpretation of social marketing’s goal and potential, and the subsequent conflicts with psychological orientation research, is understandable. The next section will outline the alternative postmodern ‘psycho-socio-cultural’ approach to consumption. The increasing role of consumption in helping provide identity coherence and in negotiating the full range of human needs will be discussed before the implications of this on social marketing are considered.

4.5 Reconciling psychological orientation and social marketing approaches through postmodernism

4.5.1 A postmodern psycho-socio-cultural perspective on consumption

Despite the dominant positioning of social marketing, close examination of the literature on social marketing suggests social marketing does not need to be confined merely to utilising current psychological orientations. Early writings of Kotler and Zaltman (1971:6), for example, have stated that although it is often easier to appeal to existing psychological orientations, rather than to create new ones “the authors would like to emphasize that business marketers, like social marketers, often try to diffuse fundamentally new products and services which require major attitudinal reorientations”. More recently, according to Andreasen, although he feels social marketing is “not about education or attitude change” this is only true “except to the extent that this would lead to the intended influence on behavior” (Andreasen 2003:196). Therefore changing underlying orientations is not embraced, yet it is not entirely excluded from definitions of social marketing.

However, the greater argument for including an active alignment of social marketing with psychological orientation influencing, comes through recognising the reinterpretation of the theoretical basis of marketing itself. In the past decades, mirroring changes in economic theory (Douglas and Isherwood, 1979), marketing has begun to be interpreted within a postmodern perspective of consumption instead of a rational economic approach (Fuat Firat and Dholakia, 2006; Peñaloza & Venkatesh 2006).

The use of social and cultural theory, although only infrequently applied to the environmental field (Shove and Warde, 2002), has gained pockets of strong support in both the sustainable consumption (Shove and Warde, 2002; Jackson, 2005), marketing (Peñaloza and Venkatesh, 2006), and social marketing spheres (Fox and Kotler, 1980). This is in line with the “ascendancy of cultural analysis

within the discipline of sociology” (Dunlap and McCright 2008:1046) and indeed many other disciplines such as geography. Known as the ‘cultural turn’, this has resulted in recognition of the role of culture in shaping human behaviour. Jackson (Jackson 2004b:18) notes the significance of the shift from the rational perspective is significant because: “Once this simple economic model of consumer behaviour is abandoned, a host of other possible policy interventions present themselves.”

With a postmodern lens the interrelations between the psychological, social and cultural realms is highlighted, hence, reference in this thesis to this approach as psycho-socio-cultural, although it should be noted there are various terms that have been used, such as interpretative social science (Tharp and Scott, 1990) or postmodernism (Eliot and Wattanasuwan, 1998). This approach emphasises the role of symbolic meaning embedded in consumption practices a key way in which information about society and the self is transmitted. As marketing plays a particularly important role in symbolic meaning creation and reinforcement, it has a vital role in shaping all three realms, including personal identities which encompass a range of psychological orientations. This therefore necessitates reinterpretation of the role of social marketing and its interaction with psychological orientations and needs.

Chapter Two included an overview of the complex concept of ‘identity’, which encompasses a person’s view of who they are, including their psychological orientations, such as their values. From a postmodern perspective, the role of consumption in negotiating identities, as well as social and cultural structures through transmission of symbolic meaning, is key (Bauman, 1998; Dittmar, 1994; Featherstone, 1991; Giddens, 1991; McCracken, 1990).

It has long been recognised that consumption goods are imbued with symbolic meaning by humans, that these are specific to certain social and cultural settings (Mauss, 1954) and that they have been utilised since early society as a way to negotiate a sense of self (Miller, 1995; Douglas and Isherwood, 1979). However, in advanced Western society the role of symbolically loaded consumption in social and identity construction has become heightened (Bauman, 1998; Dittmar, 1994;

Featherstone, 1991; Giddens, 1991; McCracken, 1990). Therefore, where previously we were defined by what we produced, i.e. the dominant occupations of our families, we are now primarily defined by what we consume (Beck, 1992; Baudrillard, 1998). This shift from a production basis of social and identity structuring, to a consumption one, is the key change causing many to maintain that we are in a post-modern era (Featherstone, 1991; Bauman, 1992; Baudrillard, 1998).

The increased importance of consumption to society, cultures and individuals has been attributed to the process of modernity which encompassed the breakdown of traditional forms of social structure (Beck, 1992), the proliferation of consumption choice (Bocock, 1993; Slater, 1999), and increased disposable incomes (Ransome, 2005). Additionally, the role of heightened activity of marketing and advertising is also seen as bound up in the move to postmodernism, because marketing is a critical medium for how symbolic meaning is created and reinforced (Baudrillard, 1998).

Chaney notes the heightened consciousness within society because of the need for voluntary identification with, or repulsion of, the way others live. This is necessary to create “normative hierarchies of structured difference” which we can operate within (Chaney, 1996:6). As a result, there is a heightened reflexive element to society and an endemic concern regarding social identity, distinction and difference (Chaney, 1996). This reflexivity is lived through consumption, which has become a key tool in sense making and the quest for psychological stability (Solomon, 1983; Englis & Solomon, 1995; Dittmar, 1992; Elliott and Wattanasuwan, 1998).

The symbolic meanings of consumption practices are formed by historically created cultural contexts and these may operate at many different levels, including the supra-national, community or lifestyle level (Holt, 1997). These cultures of shared symbolic meaning provide a structure, which endures over time and yet is dynamically negotiated, and therefore continuously influenced and transformed (Tharp and Scott, 1990). The school of symbolic interactionism formalised the role

of consumption as a symbolic practice whereby: People's actions towards things are based on their symbolic meanings; those meanings are negotiated through social discourse; and meanings are dependent on the individual and the specific situation (Blumer, 1969). This interaction between the psychological, social and cultural means that the realms are in constant dialogue, influencing each other on an ongoing symbolic dance. Wilk (1999, 2002) emphasises the importance of this multigenic and dynamic approach to consumption "*Multigenic* in the sense of having many causes, and *dynamic* in that these diverse causes are linked in multiple and complex ways." (Wilk 1999:15) Therefore, rather than emphasising either the status and identity (sociological) aspects of consumption or the cultural (anthropological) meaning of consumption or the individual psychological orientation of consumers, all three are recognised as significant and highly inter-dependent.

As outlined in Chapter Two, an identity encompasses and structures values and other psychological orientations. The symbolic meaning of different consumption practices, within different cultures and sub-cultures, therefore helps people interpret what different identities mean, in terms of their component features. For example, for a student, symbolic messages transmitted in adverts or product features will help answer identity questions such as what does it mean to be a student (or a specific sort of student in a specific University) in terms of what should I think about authority? How should I feel about human rights? What value should I place on nature? This therefore includes how different psychological orientations are seen to connect to certain identities and also to different forms of consumption.

The move from a rational approach to a postmodern, psycho-socio-cultural approach to consumption, has implications for how the consumption practices of HH are interpreted. The importance of maintaining identity coherence through certain consumption practices, calls into question a view that HH are engaged in 'excessive' consumption, driven primarily by greed or hedonism. Consumption's critical role in fulfilling psychological wellbeing, particularly identity coherence, means that ESC such as leisure flights, large-engine cars and new durable

products that are often symbolically connected with HH lifestyle groups, are likely to be playing multiple and important roles. Research indicates that this goes beyond the Veblenian conspicuous consumption because the links between identity and consumption are foundational at a personal psychological level, with the strength of the relationship dependent on the importance of the identity concerned and not how visible or 'conspicuous' the consumption is to others (Kleine et al. 1993; O'Cass and McEwan, 2004). Therefore consumption which provides personal or social identity equilibrium, such as an affluent identity, is not always conscious, strategic or limited to items on public display, as is clear in the case of designer underwear (Kleine et al. 1993; O'Cass and McEwan 2004). Furthermore, the seemingly most mundane of product, service or event, as well as the most luxurious, might play a profoundly important role in a HH life through its symbolic properties.

4.5.2 A postmodern psycho-socio-cultural perspective on human needs

As has been discussed, the postmodern approach to consumption situates the symbolic properties of products and services as having become particularly important in shaping people's identities. However, maintaining a coherent identity has been isolated as just one of a number of basic human needs (Max-Neef, 1991). As the concept of 'needs' is both central to interpretations of sustainability, for example, the most cited Brundtland definition (WCED, 1987), as well as to marketing (see Chapter Three and Section 4.4 above), it is important to consider the implications of a psycho-socio-cultural approach on interpretations of the nature and dynamic of human needs satisfaction.

Whereas the rational economic approach to consumption sees needs as finite and insatiable and distances itself from what drives certain 'needs', a psycho-socio-cultural approach tends to emphasise how the interplay of the cultural, the social and the psychological drive how a number of fixed universal underlying needs are fulfilled. Jackson and colleagues have, in recent years, drawn clear attention to the importance of reinterpreting needs in this vein (Jackson and Marks, 1999; Jackson

2004; Jackson et al., 2004; Jager 2004; Jackson 2005). The psycho-socio-cultural approach to consumption therefore offers a different perspective on human needs to the disparate positions that have created “protracted and sometimes fierce disagreements between protagonists” (Jackson 2005:11). (See Jackson et al. 2004 paper for a particularly detailed review of the needs literature).

From this perspective, what constitutes a basic quality of life is highly contextual. Beyond minimal subsistence, the relative importance of physical, psychological, social or other needs is complex and context specific (Wilk, 2002; Jackson 2005). Jackson draws particular attention to the work of Manfred Max-Neef, which emanates from a collaborative project into human-scale development. Rejecting Maslovian emphasis on need hierarchy, Max-Neef identifies nine needs which are subsistence, protection, affection, understanding, participation, idleness, creation, identity and freedom. None of these needs is seen to be more important than the other, and no need must be satisfied first, other than if a need is so severely impaired as to overshadow any other impulse (e.g. extreme hunger or thirst). Max-Neef points out that satisfiers interact with each other and underlying needs in varying and complex ways, and that this means some cultures develop systems of needs satisfaction that are more successful than others. The five key types of satisfiers are listed below:

- **Destroyers:** satisfiers which, while intended to satisfy a need, make the very satisfaction of this need (and usually some others as well) impossible.
- **Pseudo-satisfiers:** elements that generate a false sense of satisfaction of a given need.
- **Inhibiting:** satisfiers that by over satisfying a specific need hamper the possibility of satisfying other needs.
- **Singular:** satisfier specialised in the satisfaction of a particular need and neutral with respect to others.
- **Synergic:** satisfiers that satisfy a given need whilst stimulating and contributing to the fulfilment of other needs.

Importantly, although Max-Neef (1991) takes a position that needs are finite and common to all humans, using a psycho-socio-cultural approach, he emphasises that what differentiates societies, cultures and sub-cultures are different modes of needs satisfaction and different economic goods (consumption practices) which fulfil these underlying needs, depending on the culture and resources. For example, he talks about the 'need' for understanding and the related need satisfaction categories of investigating, studying and experimenting, which he states, give rise to a range of economic goods such as books and tools. Therefore ESC such as cars exist, because personal transportation is the way needs of participation and subsistence (and other needs) are partly satisfied in certain cultures and sub-cultures. Max-Neef established three important features of needs as they relate to consumption practices: They change over time, for example, through fashion; they are different depending on the culture, and within those cultures they vary by social strata. This last point signifies the role of status and income in differentiating cultural expression of need satisfaction and is highly related to how the need for identity is fulfilled, as discussed in the previous section.

The way in which the connection between needs, needs satisfiers and consumption practices occurs, and why these connections vary between cultures, is obviously important when considering how to influence consumption of HIH. Adapting Bordieu's theory of practice (1977), Wilk (1999, 2002) provides insights into how the establishment of different need satisfiers might occur within any given culture. Wilk returns to the rhetoric of wants and needs, describing needs (need satisfiers and consumption practices) as accepted standards of living in a society, and wants as "types of consumption beyond that frontier" or "conceivable or desirable practices and objects that have not yet been absorbed into the taken for granted of daily life."

Although there is an implication here that needs are perhaps sub-conscious, Wilk is clear to state that they can range from the deeply subconscious 'doxic' to explicitly stated norms and rules of conduct. Wilk (2002:10) implies that at a deep level, psychological and physiological needs are interrelated, for example, "when a Jamaican "needs" rice and peas at a meal in order to feel full and satisfied, she is

drawing on the bodily experience of doxa; needs are felt, not spoken". For Wilk, more deeply held modes of need satisfaction are often best changed by bringing them out of the unconscious doxic realm into the discursive 'heterodoxy' sphere where they are able to be challenged, debated and manipulated (Wilk, 2002). Through the 'exercise of power' they are then eventually re-set as accepted practice.

Although Wilk's interpretation of process is useful, his clear line between wants and needs, with need residing in the doxa and wants in the heterodoxy, is less constructive. Here he sees socially defined luxury as firmly in the heterodoxy and therefore a want. However, from another perspective 'luxury' is an important way in which certain sub-cultures or strata fulfil their need for coherence with either their actual or ideal identity, as discussed previously.

4.5.3 A postmodern perspective on social marketing

As symbolic meaning in consumption can shape people's psychology, it is therefore significant that marketing is a key site of meaning-making, specifically through its command of the vital symbolism contained through how products and services are designed, their prices, where they are available and how they are promoted (Baudrillard, 1998; Elliott and Wattanasuwan, 1998). Marketing occupies a particularly important role in symbolic meaning creation between underlying needs and how a particular society or sub-culture comes to satisfy those needs, be it deliberately or inadvertently. Using a postmodern perspective, Tharp and Scott state: "The Institutional marketing act is fundamentally one of creating or negotiating meanings for goods within the discourse of the larger culture in which it occurs" (1990:47). Therefore, if an exotic long-distance holiday within a particular culture or group is seen to be the optimal way of gaining a sense of freedom and affirming their identity of being adventurous, then this will have been heavily influenced by the marketing strategies of companies.

By consequence, this means that social marketing is critical for engaging in the market place of meaning creation and therefore influencing not only which

consumption and behavioural products are connected with underlying needs, but also how different values are promoted, interpreted and connected with different modes of consumption. Therefore, with a psycho-socio-cultural lens it is apparent that social marketing cannot distance itself, as it does within the rational economic framework, from its role in shaping how salient or desirable different psychological orientations are, their relationship with different identities and how they are actualised through consumption.

The role of marketing in influencing how systems of needs satisfaction and related economic goods come to be strongly connected with underlying needs also becomes significant. By embracing this influence and building into interventions the explicit recognition of the postmodern landscape of symbolic meaning in which marketing operates, social marketing practitioners can therefore address some of the main criticisms the approach has faced (as outlined in Section 4.2). For example, avoiding the promotion of values or other psychological orientations that may undermine sustainable consumption in the longer term or developing certain psychological orientations that may be helpful by strategically connecting them with the satisfaction of certain underlying needs. This direct and strategic engagement with the systems of need satisfaction reflects the early writing of Kotler on societal marketing, where he called for the long term welfare of society to be at the heart of marketing, particularly by developing products which give long term satisfaction to consumers and society as a whole (Kotler, 1972).

Using the psycho-socio-cultural approach to consumption and needs, there are two key strategies for social marketing that will now be presented. These are a more covert approach utilising marketing ‘behind the scenes’ and a more overt approach which is more in line with community-based social marketing approaches (McKenzie-Mohr and Smith, 2006). The approaches are applicable to HHH as well as all other groups.

4.5.3.1 Approach one: covert social marketing

The first approach is about working with the current symbolic meaning landscape. For example, NGOs or government may work together or engage companies to

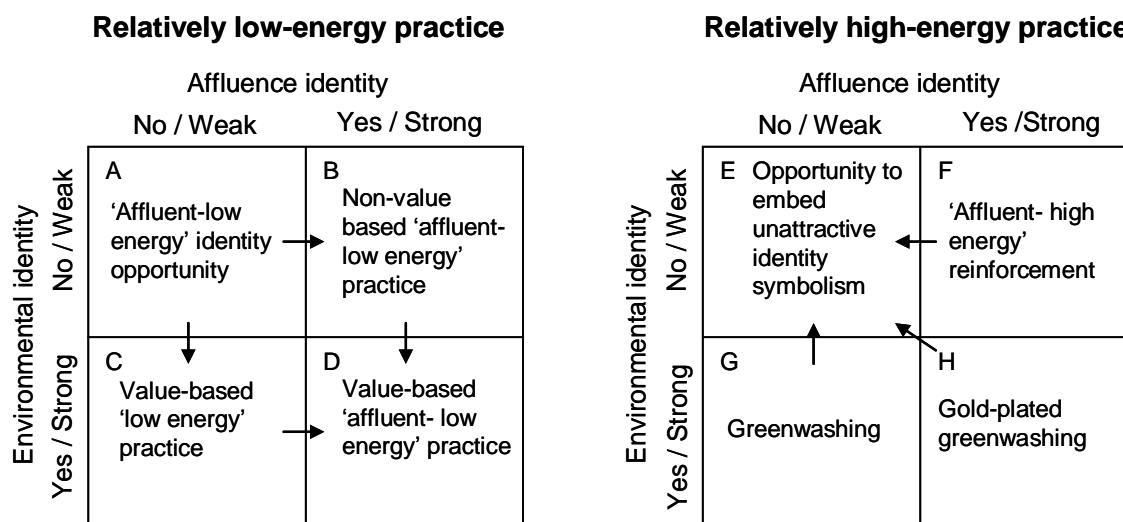
reduce the ways in which ESC is connected with certain important needs, psychological orientations and identities. This would involve actively engaging in marketing to disconnect the symbolism between the ESC consumption practice and important underlying needs or psychological orientation, and instead position more sustainable consumption practices (or non-consumption) as being more relevant to the need. This can be done by emphasising the negative symbolism inherent in the consumption practice, whilst at the same time positioning an alternative and energy frugal consumption practice as more appropriate for servicing the need. Care would need to be taken to balance short term behaviour change with long term psychological orientations that support sustainability.

Social marketing must utilise all elements of the marketing mix to achieve symbolic change, such as price, availability, advertising and product design. For example, the main needs a long haul holiday may be servicing for some HH groups may be the need for leisure (peace, beautiful surroundings, sea, sun), and to reinforce social and personal identity of affluence (exclusivity, high level of service, others from lifestyle group, a chance to impress others). In order to increase local holidays, existing low-energy products must be presented as servicing these needs, and where necessary the development of new alternative should be encouraged. At the same time, the existing negative symbolism related to long-haul flights can be emphasised in appropriate ways (time wasted flying, long queues with lots of holiday makers, following the crowd, intense heat/humidity, risk of illness).

Figure 4.3 represents a pair of matrices which specifically consider marketing's use of the affluent identity and environmental identity, but could relate to any consumption realm or a different identity other than 'affluent', or indeed replace identity with a component orientation, such as a general value. In these matrices the arrows show the direction of change in marketing strategy required in terms of what identities are symbolised, if the aim is to increase the symbolic connection between the affluent identity and environmental orientations via consumption practices. The products or services where marketing falls into section F and H should be the focus of strategic change because these perpetuate the symbolic

links between affluence and high-energy consumption (F) or dangerously combine the affluent and environmentalist identities within products that are in fact relatively environmentally impactful.

Figure 4.3 Matrices for sustainable symbolic connection decision making



Source: Author (adapted from Hurth, 2011)

By identifying where organisations are creating symbolic connections which promote sustainability, and where potent identities and psychological orientations are being used to embed unsustainable consumption, strategic sustainability can be planned. In a commercial context this would imply a 'shared-value' approach (Porter and Kramer, 2011), where sustainability is pursued through the alignment of commercial value and social value. It is argued here that by being proactive in developing sustainable identities and cultures, whereby needs can be met in enduring ways, the strong relationship that will be formed between the organisation and the customer on that journey, would enhance the strategic position of that company. This is in line with a shift toward relationship marketing, where value is created through systems of relationships between customers and companies (Grönroos, 1994).

Although what is proposed could be considered a revised approach to social marketing, social marketing is not normally associated with profit making companies and therefore, in a commercial setting, it might more usefully be considered 'sustainable marketing'. Fuller (1999:4) provides the widely utilised definition of sustainable marketing as being where: "(1) customer needs are met, (2) organizational goals are attained, and (3) the process is compatible with ecosystems". Its environmental goal is to operationalise "low-waste, no-negative-discharge" product systems". However, this definition focuses on marketing's role in product system design rather than in customer-based psycho-socio-cultural design. Alternatively, van Dam and Apeldoorn (1996:45) suggest that the inherent contradiction between marketing and sustainability means sustainable marketing rests on "optimal regulatory frameworks to govern the role of marketing". Hence, what appears to be missing from these definitions of sustainable marketing is a strategically pertinent, co-creation approach to innovation around meeting needs and long-term corporate value.

The covert approach to altering symbolic meaning described in this section could be considered a 'manipulative' approach to persuasion. This is a criticism that has been applied to social marketing in general, with one commentator criticising the UK Government's use of social marketing as mandating itself to intervene in almost every aspect of personal life from how to be a 'Dad', what to eat and how to be happy, and sees such intervention as propaganda and emotional manipulation. He believes social marketing interventions have transformed people from citizens, who hold the Government accountable, into patients who need help on an individual basis and therefore has the potential to alter the relationship between people and state. For this author "The loss of any sense of restraint when it comes to intervening in people's private lives is one of the most significant developments in public policy over the past two decades." (Furedi, 2006:3)

Such criticisms of the disturbing potential of social marketing are not new and have been expressed from its birth (see Laczniaak at el., 1979 for an early overview of ethical concerns). Fox and Kotler (1980) suggest that it is almost inevitable that as marketing is charged with being manipulative, social marketing is seen as even

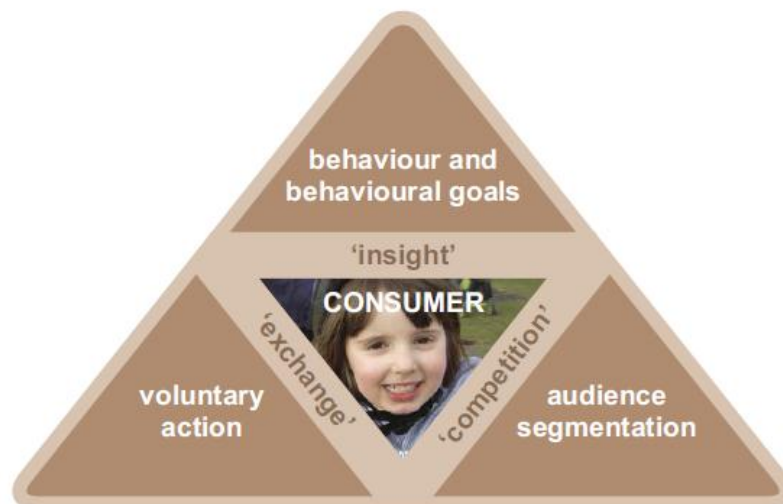
more so. They argue that “if the social marketer simply makes the strongest possible case in favor of a cause without distorting the facts, the approach is not manipulative” (p.30).

A key area for ethical concern over social marketing is in its potential power (Laczniak et al., 1979; Fox and Kotler, 1980). The power to influence behaviour also comes with great responsibility and a number of key questions arise. What if people are encouraged to adapt to a new behaviour which ends up being worse for them? What if social marketing becomes a “form of thought control by the economically powerful?” (Laczniak et al. 1979: 32). What if consumer knowledge is harnessed for political propaganda for example in elections or for support of certain politically important policies?

Some see such concerns as overstating the power of marketing over society. It is increasingly argued that marketing merely provides a catalyst for change, and that with a postmodern view of consumption, consumers themselves are involved in interpreting and creating meaning and value from products and marketing efforts (Hastings and Saren, 2003; Peñaloza and Venkatesh, 2006). Consequently marketers and consumers influence each other in a fluid fashion that is hard to pinpoint or control. Related to this, some argue that consumers are not as easily manipulated as it appears and in fact people are experienced in filtering marketing messages and using them for their own ends (Fox and Kotler, 1980). These arguments reduce concern over the power of marketers or social marketers, but at the same time highlight a further concern that seemingly small and well meant interventions may take on a life of their own and have negative and far reaching social consequences.

In an attempt to reduce concern with social marketing approach the word ‘voluntary’ is often used to describe the behaviour change being aimed at (e.g. Andreasen, 2003). For example, The National Social Marketing Centre for Excellence’s diagram (Figure 4.4) firmly places voluntary action as one of the three key features of a social marketing approach.

Figure 4.4 The social marketing approach



Source: French and Blair-Stevens, 2005

The idea that social marketing is based on ‘voluntary action’ is one that further reflects its relationship with the rational economic approach (as outlined in Section 4.4) and is therefore likely to limit social marketing’s proactive influence in how identities, needs and psychological orientations are formed. The question of volition is therefore central to considering the ethics of social marketing and reflects the perennial agency-structure debate. From one perspective all acts, except those where physical force is used, are ultimately volitional. However, from a psycho-socio-cultural perspective, defining ‘voluntary’ is extremely difficult. Drawing from the work of Bourdieu (1977, 1990) and Giddens (1984), agency (the individual) and structure (the social and cultural systems that exist) are seen as linked and each are central in determining the other over time and space.

Therefore, as discussed in this Chapter previously, although the psycho-socio-cultural approach recognises the determining role of the individual, it also emphasises how social and cultural systems of meaning are vital in shaping the apparently volitional acts of individuals. As all language and actions contain important social meaning, any programme aimed at successful behaviour change,

even via plain information or deliberative engagement, will, to some extent, influence the positions of individuals in a more covert way (Levy and Rook, 1999).

4.5.3.2 Approach two: overt social marketing

The second approach is based around a deliberative engagement approach to social marketing, which is something normally not considered within the remit of social marketing (DEA, 2010), although it is arguably a central part of community-based social marketing (McKenzie-Mohr and Smith, 2006). This would require bringing into question the necessity of certain energy significant consumption practices of HIH, such as powerful cars, heating regimes, long-haul holidays, the giving of new rather than used gifts, the use of traditional light bulbs, high turnover fashion, food wastage or air freighted food. This is likely to fall into the realm of NGO's and government intervention rather than organisational Corporate Social Responsibility.

As suggested by Wilk (2002), and discussed in Section 4.5.2, once areas of apparent need are brought into discursive elaboration within a group setting they can be questioned and debated. New modes of need satisfaction therefore have the possibility of being established consciously, before they return to the doxic level through habituation (Wilk, 2002). For this approach, organisations like Global Action Plan, who are already involved in community based social-marketing, are ideally placed. Chapter Five includes an overview of Global Action Plan and their EcoTeam programme, which focuses on behaviours of household energy, water and waste but does not explicitly take the approach outlined above. Although research indicates that these programmes are successful at reducing consumption in these areas, it is not clear if the current format influences other ESC practices of HIH in areas such as leisure flights, large-engine cars and new durable products, or psychological orientations, relative to those who have not been exposed to the programme. If these are not being affected significantly then it is possible that the deliberative engagement approach outlined above may be a more successful approach.

It is argued here that one form of social marketing alone is unlikely to provide the timely, widescale, symbolic change needed for sustainable consumption to be maintained. Although some may prefer only deliberative engagement approaches, it must be considered that without a supply of alternative consumption practices that meet needs in sustainable ways, programmes to increase sustainable consumption and psychological shifts will, at best face substantial barriers and at worse they will fail (Jager 2004; Jackson et al. 2004). Therefore marketing innovation is critical. Because of the importance of consumption to humans, as a psycho-socio-cultural approach to needs highlights: “any attempt to persuade consumers to give them up, without offering alternative resources for the fulfilment of such functionings, could rightly be regarded as naïve” (Jackson et. al., 2004:28). Jackson (2004:15) elaborates further that “the extent to which vital social functionings...are mediated through material goods in the consumer society, suggests that resistance, indeed quite violent resistance to change is to be expected”. Furthermore, the lack of attention by social marketing to work with commercial or other organisations to provide applicable consumption alternatives, may be a reason for the often observed value-action gap. Without innovation to create alternatives that help synthesise the identities, emerging environmental orientations are hampered by the conflict created when different products are weighed against each other (Hurth, 2010) (See Chapter Two for elaboration).

4.5.4 Implications for researching the consumption of higher-income householders

There are a number of important insights on HIH and consumption that arise from the psycho-socio-cultural literature on needs and consumption. Firstly, the relationship between income and consumption can be seen as neither automatic nor direct, as the rational approach posits, but instead mediated by social and historically guided cultural contexts that link needs with consumption. Consequently, increased environmental impact, rather than being a result of easily discarded superfluous or ‘luxury’ consumption is in fact likely to be driven by deeply embedded connections between ESC and underlying needs. Therefore, in order for change to occur, sustainable consumption practices (including non-

consumption) must become symbolically connected to these underlying needs instead. Asking individuals to reject a consumption practice which is vital to an important identity, or to adopt a new practice which embodies negative identity symbolism, without engaging in a strategic programme of symbolic meaning change would seem futile (Jackson et al., 2004; Jager, 2004).

Secondly, the fact that different cultures create different symbolic connections between underlying needs and consumption practices, would explain the differences in the strength of the relationship between income and energy consumption in different countries. Researchers such as Shove have investigated these cultural differences, and their impact on energy heavy practices such as air conditioning (Shove et al., 1998) or hygiene routines (Shove 2003). Although the symbolic meaning that upholds these systems has a tendency to be self-reinforcing, it appears that the system of meaning creation has accelerated. With increasing communication mediums (e.g. the internet) and diverse and fragmented social lifestyle structures, the rate of symbolic change is considered greater than in previous times, which is the basis on which a number of problems for maintaining identity coherence have been recognised in the postmodernist literature (e.g. Baudrillard, 1998).

Thirdly, for HIH ESC, the rate of change may be even faster. Social theory on social positioning, derived from authors like Veblen (1899) and Hirsch (1976), underline the notion that these symbols, particularly in relation to status aspects identity, can be quickly altered. Reinstaller and Sanditov (2003) summarise these positions: "In a capitalistic society achieved money wealth is an important criterion for social achievement ... As over time commodities lose their ability to confer status, members of these social groups tend to continuously acquire new consumption goods. They are the resources with which the competition of individuals for the scarce resource "status" takes place... In this way the material norms on which judgments of well-being are based change continuously". (p.4).

Lastly, the literature offers some, although limited, clues about how one might uncover the specific links between needs, need satisfiers and economic goods.

Max-Neef takes a specific international development view and his analysis starts from the perspective of the need. However, for the purposes of this research it is the economic good (based on its environmental impact) that is the primary site of analysis and here there is little advice on how to go about identifying related needs. The lack of guidance may be related to the complexity of this task: “It has proven extremely difficult in empirical practice to distinguish what specific needs a particular form of consumption is meeting” (Wilk, 1999:15). This complexity is enhanced by the fact that some needs, as they relate to consumption, will be more consciously understood (e.g. a fast car makes one feel a sense of freedom) whereas others, particular in terms of identity, may be held in the ‘doxa’ and unconscious (as elaborated below). Jackson et al. (2004) also conclude that determining the relationship between needs, their satisfiers and consumption practices, is highly complex and non-linear. They point out that the Max-Neef framework is “often not used prescriptively or proscriptively at all. Rather it is employed as a tool for reaching inter-subjective agreement on which kinds of satisfiers might best be employed to meet the range of underlying motivations” (p.25).

It is for this reason that, as outlined in Chapter Three, when empirically applying needs theory, simplified categories which operate in the language of the consumer, such as the categories of functional need satisfaction, experiential needs satisfaction and relational need satisfaction, may be more practicable (Parks, Jaworski and MacInnis 1986; Vickers and Renard, 2003; Kim et al. 2006).

CHAPTER FIVE

Methodology

5 METHODOLOGY

5.1 Introduction to the chapter

To recapitulate, the primary aim of this research is to identify and examine the factors influencing environmentally-significant consumption (ESC) by higher-income householders (HIH). Reflecting the thesis in general, it has three objectives, which are presented in conceptual order from general to specific:

Objective One: To identify the key environmentally-significant psychological orientations and socio-demographics of higher-income householders and how these relate to a selection of environmentally-significant consumption behaviours.

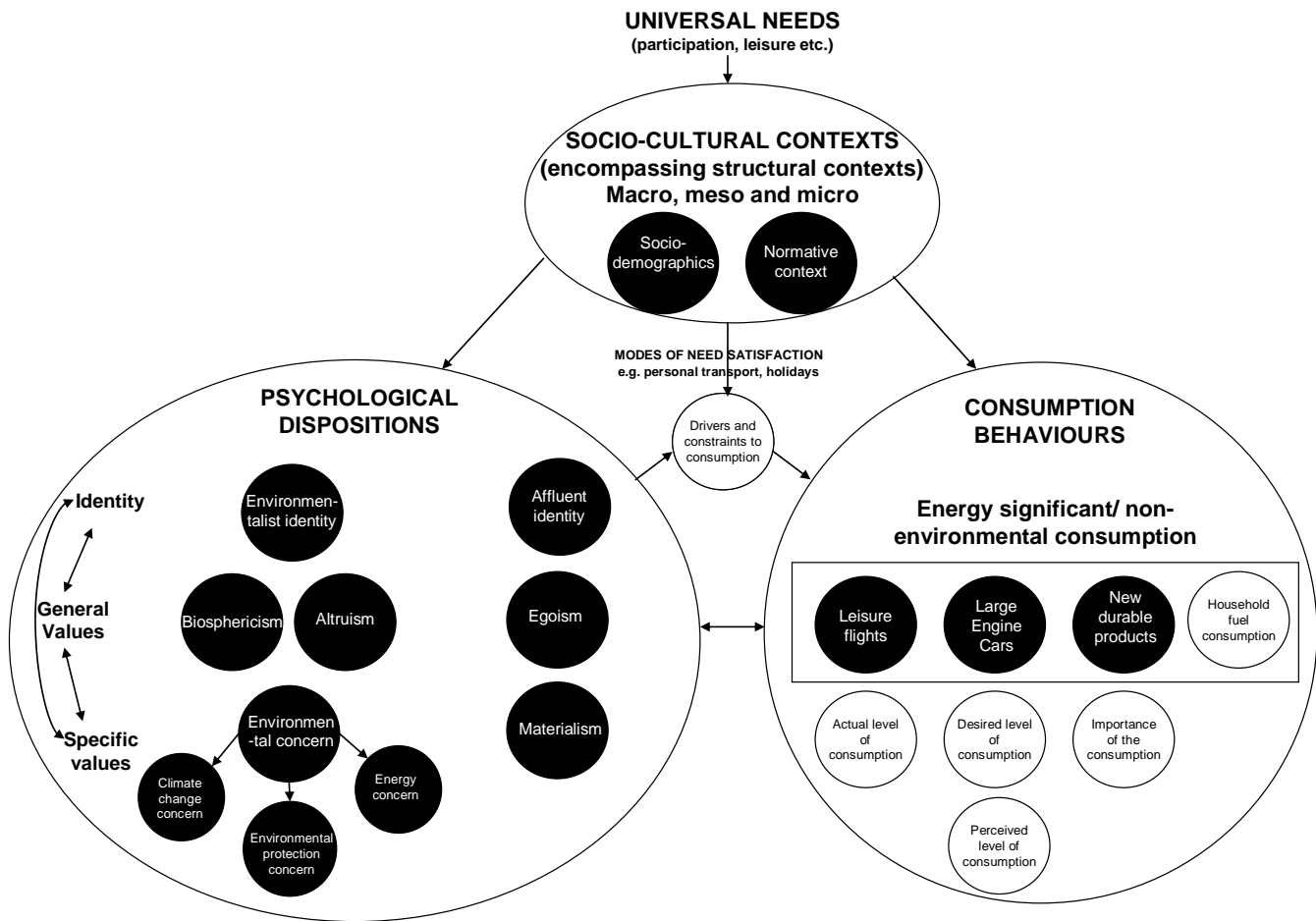
Objective Two: To provide insights into the needs-based drivers and constraints for higher-income householders in respect to a selection of environmentally-significant consumption behaviours.

Objective Three: To explore the differences between participants in a specific Global Action Plan household campaign and the general higher-income population

Building on the research context outlined in Chapter One, the assessment of relevant psychological theories in Chapter Two, needs-based motivation themes of ESC outlined in Chapter Three and the and psycho-socio-cultural approach to consumption introduced in Chapter Four, this chapter discusses the research methodology and associated methods that form the primary research in order to achieve the three objectives outlined above.

The conceptual framework of the research, as a result of the discussion presented in the first three chapters, is presented in Figure 5.1. This includes the key aspects of consumption practices that have been measured in the quantitative stage, and which will be outlined section 5.5.

Figure 5.1 Conceptual framework of the research



Source: Author

The precise ways in which these data have been gathered will be outlined in this chapter. Initially, the chapter outlines the Pragmatic epistemological paradigm which has guided the method choice, the research problem identification and the conceptual framework as presented above in Figure 5.1. The first part of this chapter will describe how Pragmatism encourages methodological pluralism and a problem-focused approach and why it is appropriately aligned to the field of sustainable consumption research. Pragmatism is particularly appropriate to this research, where one of the primary aims is to produce practical insights that will aid the development of social marketing interventions, in order to reduce the ESC of HIH.

The second part of this chapter will present a high-level overview of the research design, which emanates from the Pragmatic approach and is influenced by the external funding partners, Global Action Plan. A section will be dedicated to outlining the specifics of the Global Action Plan EcoTeam programme which forms the basis for Objective Three of this research.

Deriving from an analysis of the research problem, a two-stage multi-method design was employed where qualitative research, which drew from the literature review, was followed by a quantitative survey. It is argued that this design maximised both the amount and quality of data that could be achieved with the available resources, as well as satisfying the requirements of the research stakeholders and ensuring the objectives of the research were met. In this second section, the respective roles of the qualitative and quantitative stages will be described in the context of the macro considerations of the research. Additionally, further macro considerations that led to the sampling strategy, study area and research approach will be outlined.

The third section of this chapter will describe the qualitative research stage in detail. Although the results were directly used to help design the quantitative stage, they will only be summarised in this Chapter, with the detailed results contained in a dedicated chapter (Chapter Six). Finally, the detailed design of the quantitative stage will be presented, the results of which will be detailed in Chapter Seven.

5.2 Pragmatism and methodological pluralism

This research is situated within the field of sustainable consumption, which is a problem-focused field, drawing from a number of more theoretical disciplines and sub-disciplines. Research within the sustainable consumption field, as overviewed in Chapter Two, is embedded in a wide variety of traditional philosophical or theoretical perspectives, mainly within the social and behavioural sciences and drawing from different paradigms. The paradigm that guides research is important because as “a paradigm stance is closely related to the methodological approach taken within a research study” (Armitage, 2007:2).

Due to the influence of both the rational approach to behaviour and the psychological discipline, the positivistic tradition could be said to have dominated much energy and sustainability research, as outlined in Chapter Two. However, a number of researchers have called for, and are applying more qualitative research to sustainability issues, drawing from a constructivist perspective and a postmodern psycho-socio-cultural perspective on consumption (e.g. Shove and Warde 2002; Jackson, 2005). Further still, reflecting changes in methodological approaches more generally, there are an increasing number who have adopted or advocated a Pragmatic paradigm (e.g. Castle, 1996; Reitan 1998; Norton 1999) and it is this perspective that is considered most appropriate for this research.

One of the key features of Pragmatism is that the focus on the problem rather than the theories of a discipline, leads automatically to a flexible methodological approach, which provides a route beyond the traditional dichotomy of quantitative or qualitative methods. The differences between these two research approaches, and the paradigms 'or world views' that each represent has marked methodological debates over the past decades (Tashakkori and Teddlie, 1998; Creswell, 2003; Armitage, 2007). Quantitative research is based on the use of approaches to analysing data in order to reveal properties about that data which in turn reveal information about social or natural phenomena. It relies on standardised or 'hard' information that adheres to certain rules such as the number of cases and distribution of results around the mean.

By contrast qualitative research is usually concerned with gathering 'soft' non-standardised data, associated with the 'messy', the 'vague' and the difficult to measure. Quantitative methodologies have their roots in positivistic epistemology, where the main objective of the research is to observe and measure, with the ostensible goal for the researcher to maintain a position outside the phenomenon. Consequently, phenomena that are difficult observe or measure, as typically researched through qualitative methods, can be seen as unsuitable realms of inquiry for those strictly adhering to positivism. Qualitative methods, however, are based on a rejection of the metaphysical assumptions of the positivist approach, as

well as the development of alternative paradigms, notably critical theory (and the range of paradigms that fall within this umbrella term). These constructivist approaches depart from realism into subjectivism, whereby reality is viewed as only existing through an individual's experience of it (Tashakkori and Teddlie, 1998; Creswell, 2003; Armitage, 2007).

Drawing from debates between the quantitative and qualitative paradigms, which were heightened via a rise in researchers mixing or combining methods, Pragmatism has emerged as a third alternative to the either positivism or constructivism (Tashakkori and Teddlie, 1998; Creswell, 2003; Armitage, 2007; Morgan, 2007).

Pragmatism is based on the work of Charles Peirce in the late nineteenth century and later through key proponents such as William James, George Herbert Mead and John Dewey. Although there is no precise definition of Pragmatism, James 1906 lecture is useful in this respect. He defined it as the pursuit of knowledge based on its practical consequences. He asserts that if no practical consequences exist as a result of gaining the knowledge, then the question could be considered irrelevant. Where the lack of knowledge and the disputes around it are 'serious' then "we ought to be able to show some practical difference that must follow from one side or the other's being right" (James, 1906:1).

Pragmatism therefore, has a strong emphasis on the workable and a strong element of subjectivism and ethics, in terms of determining what the serious and practically significant subjects are, and methods for enquiring about them (Morgan, 2007). This is reflected in its abductive approach to connecting theory to data. Abduction posits that there are many reasons for a specific observation but one can abduce a likely reason or reasons as: That which would offer a sufficient as well as the simplest and most economical explanation. Although the validity of the explanation cannot be assured, the most probable explanation is arrived at. Therefore abduction helps orientation within complex realms where limited information is available. Table 5.1 outlines the key differences between the qualitative, quantitative and Pragmatic approaches.

Table 5.1 Qualitative, quantitative and Pragmatic approaches

	Qualitative Approach	Quantitative Approach	Pragmatic Approach
Connection of theory and data	Induction	Deduction	Abduction
Relationship to research process	Subjectivity	Objectivity	Intersubjectivity
Inference from data	Context	Generality	Transferability

Adapted from Morgan, 2007

As introduced above, Pragmatism does not relate specifically to any particular method, but rather emphasises the choice of methods depending on the context. In this way the methodological polythesisism of the consumption research of Bourdieu (Wacquant, 2006), the multigenic approach to sustainability research, advocated by Wilk (2002) or the methodological anarchy that Feyerband (1975) argued exists even in the natural sciences, could all be considered as being within the Pragmatist philosophy.

Advocating the use of different methods does not render the choice of methods arbitrary, but rather greatly increases the effort and context analysis that must be done in order to arrive at the most appropriate design. The rationale behind any research design needs to be clearly expressed (Hurmerinta-Peltomaki and Nummela, 2006; Creswell, 2003). Here, a staged approach to methods has been used, whereby the primary purpose of one method (qualitative interviews), is to formulate the approach to the next stage, which encompasses a different method (quantitative survey). Because stage one was used to inform stage two, data triangulation would not be possible, as the results would be self-referenced. However, the results of both stages can be used to add combined richness to the conclusions and discussion of the research in Chapter Eight.

Drawing from Cherryholmes (1992) and Murphy (1990), Creswell (2003:12) summarises a list of knowledge claims which underpin the Pragmatic approach to method selection. A number of these are summarised here:

- 1) Pragmatism is not committed to any one system of philosophy or reality, therefore both quantitative and qualitative research can be liberally drawn from.
- 2) Individual researchers have a freedom of choice. They are free to choose the methods, techniques and procedures of research that best meet their needs and purposes.
- 3) Pragmatists do not see the world as an absolute unity, therefore many approaches to analysing and collecting data can be used.
- 4) Truth is what works at the time; it is not based in a strict dualism between the mind and a reality completely independent of the mind. Therefore methods providing the best understanding of the research problem is the most important driver of method choice
- 5) Pragmatist researchers look to the 'what' and 'how' to research based on its intended consequences – where they want to go with it.
- 6) Pragmatists agree that research always occurs in social, historical, political and other contexts.

The last point in Creswell's list above, is particularly important for this research, as this reflects a postmodern 'psycho-socio-cultural' perspective, as outlined in Chapter Four of this thesis.

Pragmatism and sustainability would appear to be natural partners, with sustainability being about the solving of socially defined and subjectively reviewed serious problems, which require results that are practicable and near-term. Some have resisted a Pragmatic approach to sustainability as it does not easily encompass the traditional environmental claim that "all of us *ought* to care about nature, because nature has an intrinsic value independent of the human activity of valuing." (Reitan 1998:1). On the other hand, Reitan (1998) points out that for others, altering values and worldviews is fundamentally important to changing behaviour (as reviewed in Chapter Two), and therefore inherently Pragmatic.

5.3 The research design: Macro considerations

As discussed in Section 5.2 above, a Pragmatic approach leads to methodological selection, based on the specific context being studied and the objectives of the research. In this context, four factors guided the overall research design. The first was that all the objectives were pursued in the context of providing insights appropriate to practitioners. This led to a primarily quantitative approach, as although qualitative research is increasingly relied on for policy and other decisions, providing data based on a wider sample of respondents, and within a quantitative framework, is still considered more culturally acceptable as an evidence base for further research or action.

The second influencing factor was the lack of prior research, particularly in terms of need drivers of ESC of HIH (Objective Two). An exploratory preliminary stage was therefore deemed necessary to help assess the most relevant items for the quantitative instrument and to provide additional insights on ESC by HIH. Qualitative research is recognised to be most appropriate at guiding item formulation and allowing issues to be uncovered where only semi-structured theories have been developed (Malhotra and Birks, 2006). Ideally, an iterative process would occur whereby theories derived from qualitative research with a small sample would be explored further through quantitative research on a larger sample, and significant factors derived would be again explored more fully in a qualitative setting and so forth. In this way theories would be refined over time. However, resource constraints, in terms of time available, a single researcher and restricted financial resources, limited the research to two stages. The aim was that the results from these stages would provide the basis of further, or new, stages of enquiry, which could be geared towards specific social marketing interventions or further theoretical research.

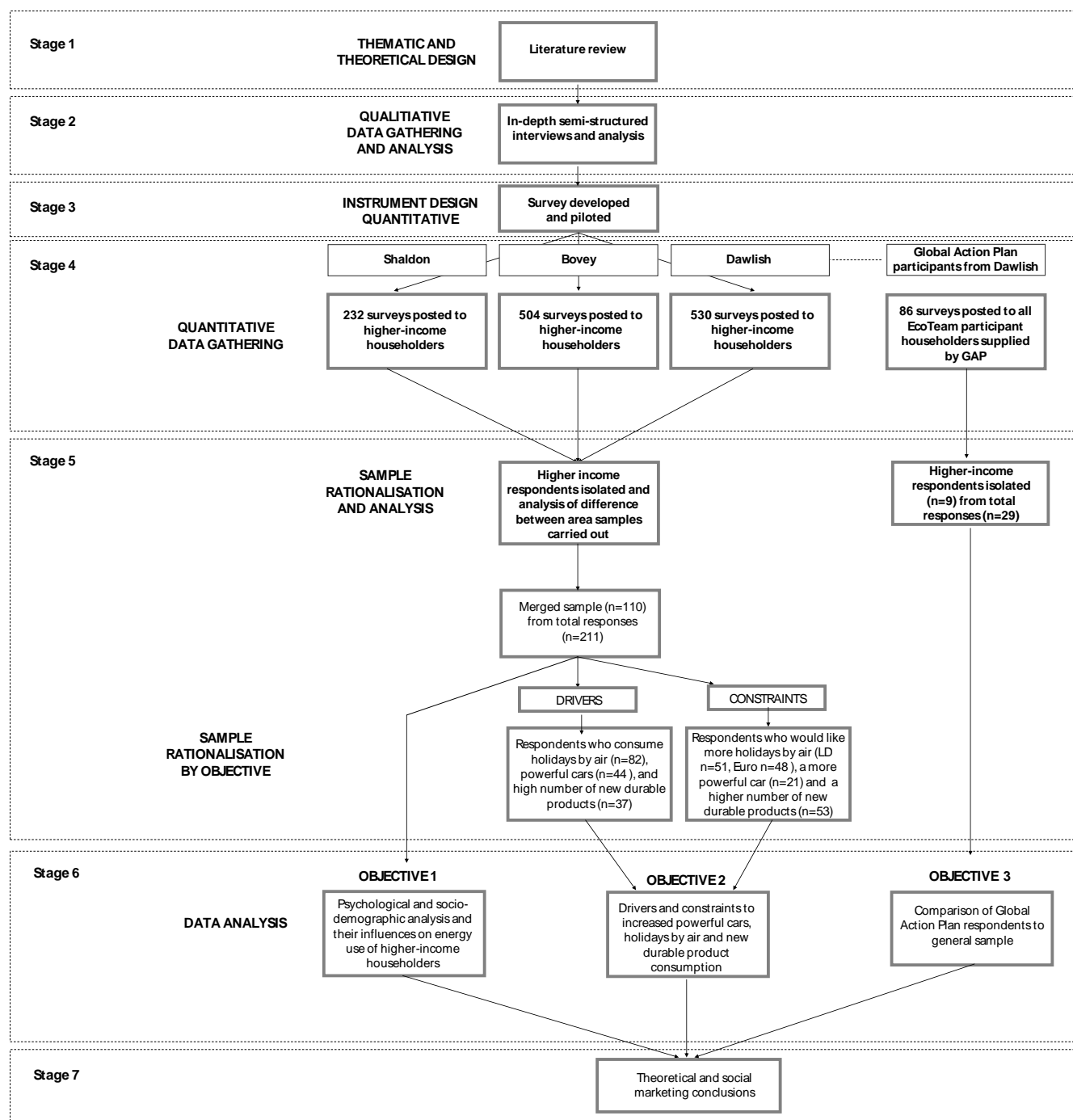
The third influencing factor was the sampling requirements of the key funding partner, GAP, which resulted in three geographic areas within Teignbridge in Devon being sampled (Section 5.3.3).

Fourthly, a key consideration of the study was the likelihood that any investigation into higher energy practices, if framed as an environmentally geared enquiry, could have reduced validity due to the high possibility of social desirable responding (SDR). This is because income and material profligacy are sensitive topics that may increase the possibility of inaccurate responding in order to be seen favourably by others and oneself (Section 5.3.4).

This section will outline the above four factors in the order presented above. Finally, before moving on to consider the research stages in detail, the exact definition of 'higher-income' used in this research will be outlined.

Figure 5.2 provides an overview of the research design. The literature review has been covered in Chapters Two and Three. Stages Two, Three and Four will be considered in this Chapter (with the exception of the qualitative analysis of Stage Two which will be presented separately in Chapter Six). Stage Five and Six will be considered in and Chapter Seven and Chapter Eight relates to the final stage.

Figure 5.2 Research design schematic



5.3.1 Global Action Plan

Before presenting the macro considerations in more detail, it is important to outline the GAP EcoTeam programme which was the basis of the third objective of this thesis: to provide information about whether those HH who have completed a EcoTeam programme vary significantly in their energy behaviour and psychological orientations to those in the general population. This section will provide an overview of GAP and their EcoTeam programmes and what they are designed to achieve in psychological and behavioural terms.

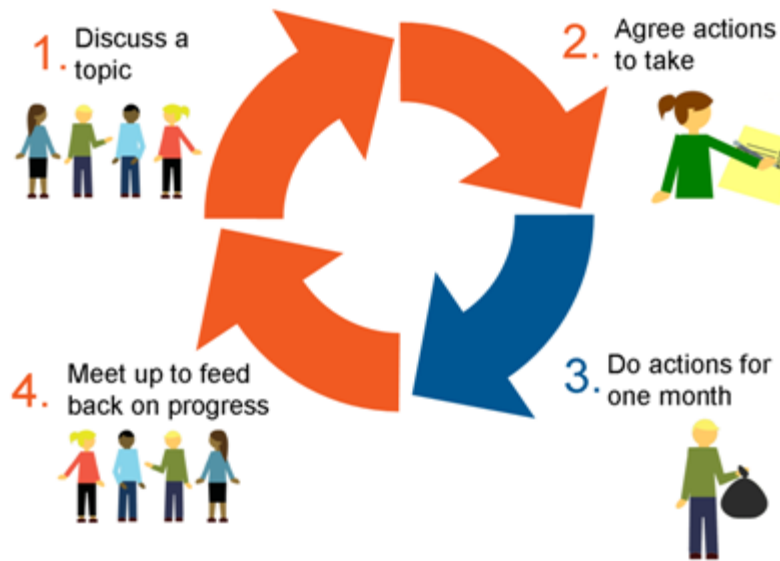
GAP considers itself “the UK’s leading environmental behaviour change organisation” (GAP, 2011). GAP’s leading position in behavioural intervention is somewhat verified by the range of academic commentary and research attention their programmes receive (Maiteny, 2000; Hobson, 2003, 2004; Michaelis, 2004; Hargreaves et al., 2008). GAP started in the U.S.A and operates internationally, coming to the UK in the early 1990’s. Although its focus has changed over the years somewhat, GAP currently undertakes a range of sector focused behavioural intervention programmes including those focused on businesses, local authorities, 16-25 year olds (Climate Squad), schools (Action at School) and of particular interest to this thesis, GAP has a programme targeting the community and household level (EcoTeams).

EcoTeams is a long established community based social marketing programme, having previously been implemented in the U.S.A. and the Netherlands. Variations on the EcoTeam model that GAP UK has employed are ‘Action at Home’, used by local authorities to support their LA21 initiatives which was more involved and less small-group based, and ‘Small Change’, which aimed to work with more disadvantaged communities (Whiting, 2008) and is was very similar to EcoTeams but with a larger focus on money saving and healthy lifestyles. GAP’s approach “aims to find positive ways to persuade individuals to think about and change their lifestyle practices, taking the “small steps” approach.” (Hobson, 2004:126). EcoTeams concentrates on specific behaviours such as water use, waste, energy use, household chemicals and transport (Hargreaves and Restorick, 2006).

Around six household representatives within a locality, who are often from existing social networks, are recruited to take part in a series of action focused meetings. These meetings are delivered by a facilitator who's aim is to "help participants through the process and encourage discussion" and "offer information, help and advice but take a hands-off approach, encouraging participants to find information out for themselves and letting them decide what actions to take" (Hargreaves and Restorick, 2006:5). At meetings, a workbook is used to provide step-by-step actions that can be chosen to fit with their lifestyle, these are then typically trialled for one month before the next meeting (see Figure 5.3). These are "small, habitual behaviours such as turning taps off when brushing teeth and turning lights off after use, which collectively could amount to significant resource savings." (Hobson, 2004:131).

Over the four to six months that the teams last, households are encouraged to do 'homework' which involves talking with others and following debates (Hargreaves et al., 2008), measuring for their waste, recycling, energy and water consumption and celebrate their progress (Hargreaves et al., 2008; Whiting, 2008). At the end of the process there is an emphasis on 'next steps' to provide the momentum for continued change. GAP reports that since initiation around 2,300 households in the UK have engaged with EcoTeams (Hargreaves and Restorick, 2006:5). Hobson (2002) suggests that GAPs approach is "unique in terms of behaviour change programmes in the UK today, since its information sits within the rationalisation framing of sustainable consumption and yet offers an intensive, rather than one-off, access to information over a set period of time, as well as facilitating local and national support networks." (p.107).

Figure 5.3 The EcoTeams approach



Source: Whiting, 2008

What differentiates the EcoTeams intervention approach is that it rests on groups of people coming together, with a facilitator, to discuss drivers and barriers to change. As such, change occurs and is reinforced within a normative context. Hargreaves et al. (2008) note the similarity in approach to Weight-watchers and Simplicity Circles. However, within the environmental behaviour change arena, EcoTeams has been one of only a few considering the group context as vital for helping in the “potentially unsettling process of re-negotiating what counts as appropriate behaviour in different contexts” (Hargreaves et al., 2008:754), although the extent to which this deeper cultural change occurs is not clear. Specifically, EcoTeams are seen as paying attention to the importance of contextualized interaction in promoting the uptake and diffusion of new modes of behaviour (Hobson, 2002; Hargreaves et al., 2008). In this way, the EcoTeam model could be considered a form of community based social marketing (CBSM) (McKenzie-Mohr and Smith, 1999).

McKenzie-Mohr and Smith’s approach to behavioural change is that people’s engagement with specific pro-environmental behaviours is based on perceived benefits, perceived barriers and ease of the behaviour. Furthermore, in trying to

increase engagement with a behaviour, they state that, drawing on research in social psychology, this is best achieved “at the community level” and involving “direct contact with people” (McKenzie-Mohr and Smith, 1999:10). GAP approach is about behaviour change in specific areas, and relies on the social group setting to work through barriers and increase motivations, thereby making behaviour change more likely and more durable (Whiting, 2008). Although some make the connection between GAP and CBSM (e.g. Power, 2011), GAP do not self-attribute their approach as CSBM, although it is often inferred, for example with a case study submitted to the National Social Marketing Centre (Whiting, 2008). On occasion, GAP’s approach has been actively contrasted with a social marketing approach where instead, it was considered a deliberative engagement or ‘think’ strategy (DEA, 2010). It is possible that the term is avoided by GAP because of negative association with the term, which this thesis has argued is based on a narrow rational approach interpretation of human behaviour and the role of marketing in engaging with it.

5.3.1.1 Behavioural outcomes of EcoTeams

The high level engagement of GAP with academia, along with measurement of behaviour being a core part of the EcoTeam programme, means that there is a range of evidence on its effectiveness. Hargreaves et al. (2008) provide an overview of analysis of data for 58 programmes which have been gathered over the six years to 2008. These data are summarised in Table 5.2 and show that although in some households electricity use and waste actually increased substantially, on average teams reduced their waste by almost 20%, their electricity by almost 7% and recycling levels rose, on average, by almost 8%. Furthermore, it is reported that “Statistical analysis using a matched control group showed clearly that the changes made were a direct consequence of participation in the EcoTeam process” (Hargreaves et al., 2008).

Table 5.2 The effect of EcoTeams on behaviour

Behaviour	Change	EcoTeams (n=58) (%)
Waste	Max	-46.90
	Min	+23.93
	Average	-19.66
Recycling	Average	+7.71
Electricity	Max	-40.64
	Min	+57.69
	Average	-6.86

Adapted from Hargreaves et al. 2008, all changes significant (p. <.01)

Furthermore, a self-reported survey carried out by the New Economics Foundation (NEF) (n = 159) found that 94% said they were doing more to reduce their environmental impact; 89% reported increased awareness of their impact on the environment and 81% thought the EcoTeam meetings were effective or very effective at helping them make “small but significant changes in their lifestyle”. Additionally, 40% to 50% bought more seasonal and local produce and tried to reduce plastic bag use and 66% reduced chemical cleaning products. (NSMC, 2008:1). Participants were also encouraged to consider car use holistically by reducing short trips, using public transport and combining journeys, although the effect of this is not reported.

As well as producing positive behaviours in the course of the programme, evidence suggests that, in general, behavioural change persists in the longer term (Harland and Staats, 1997; Staats et al. 2004; Hargreaves et al. 2008; (Whiting, 2008)). As well as finding that 94% of respondents believed they would continue their environmental behaviours, the NEF report for GAP concluded that “All EcoTeamers reported they were still carrying out the pro-environmental actions started through EcoTeams over six months to two years since finishing the programme” (Whiting, 2008). This has been achieved despite criticisms from

participants that support, once the programme has finished, was poor (Whiting, 2008).

5.3.1.2 Profile of those engaged in EcoTeams

One clear conclusion from the evidence is that, despite seeking to engage diverse types of households, and sometimes targeting low income households specifically, the majority of respondents are from the middle to higher income groups (Whiting, 2008). For example, GAP's Action at Home scheme was shown to attract participants from higher income and educational qualifications (Darnton, 2004).

Furthermore, EcoTeams were found to be overrepresented by “women who are financially comfortable, well established in their communities and careers, and who have sufficient time to engage in monthly meetings” (Whiting, 2008:1). As well as having issues engaging groups from diverse and disadvantaged backgrounds, the programme has a perennial issue of tending to ‘preach to the converted’ (Whiting, 2008). This is perhaps not surprising given the strong environmental brand symbolism of Global Action Plan and EcoTeams, as well as the high levels of commitment required by the process. An analysis of the types of people engaged with EcoTeams was carried out in 2006 and this confirmed that they tended to have prior green intentions. This suggests that the level of biospheric values and environmental concern is likely to be high compared to the general population. However, where as those who were recruited by GAP, or a partner charity, tended to have strong prior green motives, those recruited by local volunteers were likely to be “less green at the outset as they have social as well as environmental motives for joining.” (Whiting, 2008:1). Hence, the best overall results were seen to be achieved with this ‘semi-facilitated’ model.

It is not clear whether these social motives are altruistically based on an understanding of the impact of their consumption behaviour on others, or based on the individual's desire to be involved in their community for personal satisfaction. However, the literature surrounding EcoTeams tends to appeal to environmental concern rather than concern for others. GAP defends the tendency to recruit environmental concerned individuals by the significant reductions in consumption

achieved even within this group. This suggests that EcoTeams is useful at reducing the value-action gap that is known to exist (see Section 2.2.1). Therefore those who have completed an EcoTeam programme would be expected to have a smaller value-action gap than those who have not. EcoTeams do not appear to engage specifically with issues of consumerism or materialism and therefore it is not clear if the process would be expected to make a significant impact on these areas.

Perhaps, in an effort to reach out to poorer and more diverse groups, there is a notable emphasis on self-enhancing motivations for becoming involved in EcoTeams on GAP's website, where a key message is "A household taking part in EcoTeams will typically reduce their bills by £170 a year" (GAP, 2008:1). This minimising of the environmental message is also visible in press releases, where the programme is described as "groups of local people who meet and work together to see how they can both reduce their household bills as well as cut their environmental impact". (GAP, 2008:1)

5.3.2 The role of the qualitative and quantitative research stages

This chapter will now return to examining the macro considerations for the research design, beginning with the basis on which qualitative and quantitative stages were included. As discussed previously, a key objective of the research is to provide social marketing insights that will reduce decision making risk around the engagement and research of HIH, in terms of their energy consumption. This is built on the theoretical understanding outlined in Chapter Four, that people's consumption activities are based on the symbolic connections between underlying needs and consumption practices. Therefore if the perceived needs and intermediary needs satisfiers that are related to ESC practices are understood, the symbolism can be strategically weakened and altered through social marketing. The outcomes of the data gathering were required to support that aim in a way that was appropriate for practitioners. Emanating from this context, the two key macro factors that influenced the research design were, first, the lack of prior information

about the needs-based drivers of the consumption practices for HIH, which led to initial qualitative data gathering. Second, was the practical acceptability and appropriateness of quantitative data, which led to the main data approach being quantitative.

5.3.2.1 The qualitative stage

Qualitative research allows the researcher to clarify concepts and form hypothesis (Malhotra and Birks, 2006), although the extent to which prior views and data exist can vary considerably. As outlined in previous chapters, research that illuminates the income-energy use relationship, even indirectly, is limited and this was a particular constraint regarding Objective Two, which sought to understand the needs-based drivers and constraints to key ESC by HIH. This meant that it was not possible to identify valid items for testing in the quantitative stage from the literature alone. Due to the constrained nature of quantitative research, where there is little room for the participant to respond in a bespoke way, the choice of items is central to validity. Therefore the qualitative stage was employed to ensure item selection was appropriate. In marketing research, initial exploratory qualitative data gathering is an extremely common approach (Malhotra and Birks, 2006), even prior to the rise of acceptability of qualitative research.

In this research the literature review considered existing perspectives on the key ESC, which enabled a range of potential drivers and constraint themes to consumption by HIH to be identified. The qualitative stage was the forum where the drivers and constraints to consumption could be explored in a way that was informed, but not constrained by these overarching literature themes. Although inductive reasoning is considered to be the key approach to qualitative data, in reality much qualitative analysis employs both inductive and deductive reasoning (Thomas, 2006). For this research, deductive reasoning played an important role as themes from the literature review were present in the researcher's mind and were explicitly cross-referenced at the end of the process (as described in section 5.4.3.2 below). However, the research was inductive in that the content analysis process also considered the data in an explicitly "goal-free" way (Scriven, 1991:56)

where the “identification of any significant unplanned or unanticipated effects or side effects arising” was a task of the analysis (Thomas, 2006:238).

5.3.2.2 The quantitative stage

The primary use of a qualitative stage in order to inform the item design of the quantitative stage, is a design often employed (McMakin et al., 2002). Indeed, qualitative research in a marketing context is often only performed as the basis of designing more structured quantitative survey research (Wrenn et al., 2006) Wrenn et al. are clear that it is not the case that exploratory qualitative research must be contained to the “preliminary work before the “real” research takes place” (2006:42) and that it may be the only research that is undertaken. In the field of sustainable consumption, as outlined in Chapter Four, there is an increasing call for a larger variety of methods to be applied, especially given the critical role of cultural and social contexts in shaping energy consumption.

However, in a marketing context, where research gives rise to immediate practical actions resulting in monetary and resource consequences, the attitude to qualitative research can be described as one of risk. Wrenn et al. note that if you have a high risk-taking decision maker they may be happy for a carefully selected small group of individuals who give similar and clear responses, for that to be the only evidence necessary. Nonetheless, “if the stakes increase, however, that same decision maker may want to follow up the exploratory research with more structured and quantifiable descriptive or causal research” (Wrenn et al., 2006:42).

The interpretation that quantifiable and therefore ‘positivistic’ quantitative research reduces risk in a marketing context, is heavily related to cultural perceptions of risk, and epistemological assumptions around the value of different modes of enquiry to provide valid outcomes. However, the dominant cultural context of ‘evidence-based’ decision making in government continues to be predominantly positivistic (Morcol, 2001; Parsons, 2002) with an indication that “the belief in the fact-value dichotomy, objectivity, rational analysis, and quantificationism is alive and in fiercely robust health” (Parsons, 2002:13). Additionally, as overviewed previously, sustainability and energy consumption research, has been dominated by the

psychological discipline. Despite socio-cultural research, the quantitative bias of the psychology field still dominates and can be seen as central to the evidence based approach within policy domains.

Lastly, it was deemed important to have a quantitative focus because by establishing levels of agreement to questions and correlations between variables across a larger number of people, information about the H1H sample can be gained that is not possible through small scale qualitative research. Although the statistical conclusions gathered from this research will not establish causal relationships they will fulfil the goal of de-risking complex social marketing intervention design and allowing for future qualitative and more extensive quantitative work on the ESC of H1H to be conceived in an informed way.

In summary, the quantitative stage was designed to be the primary way in which the three overarching objectives of the research were investigated, with support from qualitative stage in terms of helping clarify the most appropriate consumption categories and defining the items to measure the drivers and constraints of those categories. In terms of the objectives of the research, the focus of the stages is presented in Table 5.3.

Table 5.3 The focus of the research stages

	Qualitative stage	Quantitative stage
Objective 1 To identify the key environmentally-significant psychological orientations and socio-demographics of higher-income householders and how these relate to a selection of environmentally-significant consumption behaviours	✓	✓
Objective 2 To provide insights into the needs-based drivers and constraints for higher-income householders in respect to a selection of environmentally-significant consumption behaviours.	✓	✓
Objective 3 To explore the differences between Global Action Plan participants and the general higher-income population.		✓

✓ = primary focus ✓ = secondary focus

5.3.3 Global Action Plan and the study areas

A further macro research design consideration was that GAP was a key stakeholder in the research and had certain requirements of the research design which primarily influenced the sampling strategy. South Devon was decided upon as the broad sample area. A representative from GAP put forward the database of 85 participants in their 'Small Change' EcoTeam programme to be used. This programme ran between June 2004 and June 2007 in the Dawlish area of Teignbridge, South Devon (see Chapter 5.3.1 for an outline of the programme). The programme was run in partnership with Teignbridge District Council, Dawlish

Regeneration Group (Dawlish Community Trust), Devon County Council and EDF Energy.

Teignbridge is a relatively low density population area of South Devon. In terms of industry, the area is dominated by the services sector, much of which is related to a vibrant tourism industry. Although the Small Change programme was aimed primarily at lower-income groups, the administrator believed that most volunteers for the scheme were in fact HIH, however this could not be verified. The fact that GAP tends to attract higher-income groups is something referenced in Section 5.3.1.2.

Despite this, because the list had not been purposively sampled based on income, it was assumed that only an estimated 15%-25% (see Section 5.5.2.1) of the 85 people, would be HIH and a smaller number still would complete and return usable questionnaires. The valid response rate was therefore predicted to be low. It was understood by both parties that this would have an implication on the method of data analysis taken. The most appropriate means of analysing the data of these participants and comparing them to the general population sample was therefore reserved for after the number of responses returned was known. This was not seen as an issue as GAP were equally interested in the generalised outcomes of the research on the consumption of HIH, as well as any specific insights into GAP participants that could be gained.

The implication of the GAP participants being situated in the Teignbridge area was that the general population sample was drawn from the same geographical area to minimise differing influences on behaviour. Additionally, Teignbridge is the second most wealthy district in South Devon (Devon County Council, 2008). It is known heuristically that there are a number of sub-areas in Teignbridge with distinct levels of community engagement with environmental issues. Three broad areas were pinpointed by GAP as being of particular interest because of the potential differences between the environmental predisposition of their inhabitants: Bovey with a household population of approximately 3,328 (2003 data), Dawlish (central) with 3,505 households and Shaldon with 1,096 households (see Figures 5.4 and

5.5 below for geographical context). Bovey is a low density area on the edge of Dartmoor National Park. Dawlish is a higher density small town and seaside resort and Shaldon is a village on the mouth of the River Teign.

No income data is available at the sample level, but Teignbridge has a slightly higher median household income of £27,500 compared to Devon at £26,800 which is variously reported to be about 10% lower than the national average (Devon County Council, 2005). Around half of all households have an income of between £10,000 and £30,000 (Devon County Council, 2008). Teignbridge has a slightly older population profile than England and Wales with fewer 0-15 year olds (17.2% compared to 18.9%) and more in retirement age (25.8% compared to 19%) (Exeter City Council, 2009). All the sub areas are tourism areas and residentially attract a combination of retirees and families who work in the area, or commute to work in the local cities of Exeter and Plymouth.

In terms of environmental activity, Dawlish has been subject to the activities of GAP, Bovey has an active climate change community group called Bovey Climate Action, and Shaldon is an area with no known environmental action. An internet search using the term environment and the place name, supported the heuristic assumptions about the three areas and indicated there were no other remarkable environmental sustainability influences. It was assumed that because all of the areas were very closely situated, there would be similar impact on each from Devon-wide and national environmental campaigns. It was decided that it would be useful to sample these areas separately, allowing potential comparison between those participants who have been through the GAP programme, the general Dawlish population, where those participants resided, and those from Bovey and Shaldon, where there is likely to be a difference between the populations in terms of environmental values.

Map of Teignbridge District Council showing the proposed Teign Valley Greenway route. The map includes various towns and villages such as Exeter, Exminster, Kanton, Starcross, Cockwood, Dawlish Warren, Dawlish, Holcombe, Teignmouth, Shaldon, Kingskerswell, Abbotskerswell, Bolepen, Buckfastleigh, Ashburton, Newton Abbot, Dartmeet, Buckland in the Moor, Ilstington, Liskeith, Manaton, Lettaford, Moretonhampstead, Bridford, Christow, Dunsford, Whitestone, Tedburn St Mary, and Postbridge. The route is highlighted in red and orange, with a green line indicating the main route. A scale bar shows 0 to 15,300 meters, and a north arrow is present. The map is titled 'Teignbridge District Council' and 'Scale: 1:180,000'.

The map shows the distribution of the Dartford Gull in Devon and Cornwall. The gull is marked with a red dot in the Dartmoor National Park, near the town of Exeter. The map also shows the distribution of the gull in the surrounding areas, including the Dartmoor National Park and the surrounding towns and villages. A legend indicates the distribution of the Dartford Gull, with a red dot marking the location of the gull in the Dartmoor National Park. A small inset map shows the location of Devon and Cornwall within the United Kingdom.

5.3.4 Socially desirable responding

A final macro consideration for the research was the potential impact of socially desirable responding (SDR). SDR is “the tendency of individuals to make themselves look good according to current cultural norms when answering researchers questions” (Mick, 1996) thereby introducing bias to the results. It is recognised as one of the most serious issues facing the validity of social science research (Nederhof, 1985). Mick suggests this is a particular issue in ‘dark side’ consumer behaviour research, including topics such as compulsive buying, prostitution and materialism. He sees this research as very important but yet marred by a lack of consideration paid to SDR by those researching such topics. For this research, not only are issues of consumerism and materialism considered, but additionally, the sensitive topic of environmental issues and discordance between environmental and human values and action is considered. Schwartz showed that values may be connected in different ways to SDR (Schwartz et al., 1997), suggesting that if SDR is not managed, there is the possibility that those with more pro-environmental values could be inclined to respond in an SDR fashion. Furthermore, the topics of wealth, identity and the potential for normative disapproval of conspicuous consumption may also reduce the validity of results if SDR is not minimized. Additionally, questions regarding income are recognised as threatening and likely to invoke SDR (Locander et al., 1976).

Although no specific reference could be found between environmental issues and SDR, it could be justifiably assumed that the environment would be an area particularly prone to SDR. Mick’s (1996) concerns about the lack of consideration of this topic by researchers could also be easily transferred to the sustainable consumption field, with much research explicitly testing pro-environmental behaviour, as outlined in Chapter One and Two. This may, by default, invoke SDR as public normative pressures to recycle, reuse bags and reduce energy use in the home increases. This consideration has provided additional motivation for focusing this research on ESC rather than pro-environmental behaviour.

Additionally, throughout the qualitative and quantitative stages, reference to the environment was minimised and questions worded in ways that do not imply a direction of social approval. Only the value and materialism scales, which are not bespoke to this research, are more explicit in the way they seek to gather responses. Despite this, the scales were included, with the risk of SDR mitigated by adding them towards the end of the questionnaire (see Section 5.5.1.1.3 below).

5.3.5 Defining ‘higher-income’

As well as the macro research considerations outlined above, an important methodological question was how ‘higher-income’ households would be defined. Monetary wealth is most commonly measured by both income and assets. Income is a regular flow of money and is often subject to abrupt changes as sources of incomes from employment may cease. Assets are often more stable sources of wealth, which are often passed from generation to generation and can also provide regular income. Income was the primary concept of wealth considered in this research, because income is the key socio-demographic variable included in research which has led to the identification of its strong relationship with energy use and therefore environmental degradation. However, the potential psychological and behavioural differences that might relate to assets are recognised, and for this reason, assets were included as a variable in the quantitative component of this research. The terms wealth and affluence will be used interchangeably in this thesis to refer to financial resources including income and assets.

Whether someone is ‘higher-income’ is a relative issue and this is one reason that the term ‘higher-income’ has been used rather than ‘high-income’ which suggests an absolute level at the top of the income scale. High-income householders are likely to demonstrate qualitatively different energy consumption practices such as private jets and multiple global homes. It was recognised that research into these ‘super-rich’ would require a distinct methodology and sampling strategy, and would produce different results to research into relatively rich householders.

Although it is possible that some respondents could fall into this high-income category, the geographic location under study makes this unlikely. Therefore, this research aims to consider the latter group who have incomes that are high enough above average that their wealth is likely to dictate a lifestyle that qualitatively alters their consumption practices compared to those of average wealth, yet not specifically to target the highest-income households. For this research it was decided that the top 25% of UK households, by income, was an appropriate cut off.

At a household level the data on income are sparse, particularly at geographical or postcode levels. Such data are not collected by the Census and is only variously reported. Devon County Council states that this lack of data is because income is a sensitive issue and often left out of surveys. Additionally, income tax information cannot be used (Devon County Council, 2008). The best source of general level information is the UK Family Expenditure Survey produced by the Office of National Statistics. By taking each data point for all 6,786 respondents the average UK household income for the top 25% is £31,635. Reflecting income inequalities this is very close to the mean for all respondents of £31,197. To get a more accurate cut off point for entry for the top 25% of household income, all data points were ordered and the income figure of the first household who fell into the top 25% bracket was used. This figure was £40,690 per year and hence a £40,000 gross total income was considered an appropriate cut off level. For comparison, the University of Oxford's Integrated Travel Emissions Profiles project classified HIH as those with incomes of £40,000 and over (Oxford University, 2007) although the reason for this figure was not available.

Income has been defined at the household level because this is where income is generally budgeted and spent, however only one representative from each household was contacted to partake in the research. By looking at household rather than individual income, participants in the research could be drawn from adults in the household regardless of their individual income. This is important as it is known that decisions on expenditure are not made on the basis of who earns the income (Valentine, 1999). A house-wife, house-husband or previously earning retiree may not have a personal income, but may be an equally appropriate

respondent on household consumption practices. Locating householders from HH that fall into the higher-income category, here defined as £40,000 household income and over, was a constrained task and required a carefully considered sampling strategy for both the qualitative and quantitative stages. These strategies will be dealt with in Sections 5.4.2 and 5.5.3

5.4 The qualitative research stage: Approach and implementation

5.4.1 Qualitative instrument choice and design

5.4.1.1 Choice of the qualitative method

Focus groups were initially considered, as a frequently used way of gathering qualitative insights from participants in behavioural studies. This is particularly true in a marketing context, which is the field where the use of focus group was popularised in the 1950's (Krueger and Casey, 2000). Focus groups differ to group interviews - where a number of people are interviewed together for convenience. In focus groups the interaction between participants is as much part of the data as the information disclosed by the individuals (Kitzinger, 1995). This form of data gathering is particularly useful in understanding normative influences over individuals' decision making, perception and information processing (Stewart et al., 2007). In the context of this research, focus groups would have been useful at making apparent the cultural narratives around why ESC choices were made and what made them 'necessary' to households. However, the benefits were outweighed by a number of limiting factors.

Firstly, despite minimising environmental references, the nature of the topic inevitably touched on aspects of materialism and environmentalism, which are highly subject to SDR as outlined in Section 5.3.4. As such, there was a risk that the conversation would have remained at a superficial level as people were reluctant to admit the true nature of their consumption in the company of others. Secondly, another limitation of focus groups is that people tend to check their

behaviour and adjust their views to conform with expressed norms, risking that the granularity of participants' views would be lost. Thirdly, focus groups are good when singular topics are being discussed around participant's concrete experience (Merton and Kendall, 1946). This was not appropriate to this research, which aimed to explore a wide number of consumption practices and their facets.

Although much recent focus group research has explored a wide range of topics in an unstructured way, Stewart et al. (2007:9) describe how this is "unlikely to generate the social atmospherics that are conducive to the traditional normative requirement of conversational interviewing, in-depth data elicitation and within-group interaction". Furthermore, in a group setting, topics inevitably take longer to discuss. Therefore, the format would be unsuitable for broad exploration of a number of topics in a time scale that people are comfortable with.

For these reasons, it was decided that interviews would be a more appropriate method. Interviews can be described as "a conversation with a purpose" (Webb and Webb, 1932:130) allowing respondents to express themselves naturally as they would pass information in everyday life.

There is a long history of debate over the best format for conducting interviews, for example, the exact role of the interviewer and how the process of interview in itself alters the views of the participants about a topic (Legard et al., 2003). Kvale (1996) describes two main perspectives regarding interviews, the first, the 'minor metaphor', sees knowledge as a given with the interviewer's role to elicit that knowledge without contaminating it. The second, is a constructivist perspective which Kvale refers to as the 'traveller metaphor', whereby the interviewer necessarily influences the data produced through the conversational process and thus leads the interviewee to new insights they might not have arrived at on their own. Although the understanding that an interviewer can never entirely eliminate their influence over the interviewee has led some to question the validity of the data produced (Legard et al. 2003), others argue that "although the interview is itself a symbolic interaction, this does not discount the possibility that knowledge of

the social world beyond the interaction can be obtained” (Miller and Glassner, 1997:100).

In this research, the interview process was recognised as necessarily influencing the interviewee to some extent. However, rather than this fact being exploited and emphasised, as is the case in some feminist and postmodern approaches (Legard et al., 2003), the impact of the researcher and socially powerful topic in question was sought to be minimised, as outlined in Section 5.3.4.

Interviews can range from unstructured to highly structured, where they are essentially a face to face questionnaire (Arksey and Knight, 1999). In-depth interviews are one of the main qualitative data gathering techniques (Legard et al. 2003). They are focused and planned in order to elicit certain information. Due to the complex and varied nature of the topic, a few in-depth interviews were seen as preferable to a large number of short interviews. Additionally, a semi-structured approach was taken in order to guide the conversation around a specific set of topics, whilst allowing the general flow of conversation to proceed.

5.4.1.2 Design of the qualitative interviews

Although qualitative interviews do not need to be informed by specific *a priori* hypotheses, their construction must be informed by some prior conclusions about the nature of the phenomenon under question. Even unstructured questionnaires must have some thematic basis for the conversation to be convened and the researcher to play a role (Arksey and Knight, 1999; Legard et al. 2003). In the case of this research, the initial aims and literature review were significant in determining, in some detail, what type of information was being sought, and how the qualitative interviews were contributing. As outlined in Section 5.3.2, this was primarily to investigate the most appropriate ESC consumption categories for quantitative research and the items that should be utilised to represent their drivers and constraints. In the qualitative stage, these drivers and constraints were initially explored in relation to six initial areas of ESC behaviour: leisure flights, energy heavy car choice, product consumption, food, home choice and heating (system and regime). The large number of potential variables within each category meant

the interview was designed to cover a wide range of sub-topics, although it was expected only a proportion of the possible sub-topics would be covered by each interview. Although there were drawbacks to enquiring about a wide range of topics, it was decided that this would allow for broad exploration of this under-researched area. It was also recognised that not all consumption categories and ESC could be included and even fewer could be explored at the quantitative stage. Therefore the qualitative phase would help filter what were the most valid and feasible categories to be pursued in the quantitative stage.

Although six areas of consumption were initially considered (as outlined above), only three areas of consumption, that were deemed to be most volitional, were focused on for the quantitative stage: leisure flights (long-distance and European), the consumption of large-engine cars and new durable product consumption. Only these three will be reported on here to maintain clarity and to contain the scope and length of the document.

Volition is interpreted here in a physical sense, in that the consumption practices are not subject to large numbers of physical factors that shape them. The focus on volitional consumption meant that leisure flights, rather than flights for business purposes were considered. Additionally, although energy from cars is a factor of both the car used and its pattern of use, the latter is likely to be subject to a greater range of physical drivers and constraints that are considered to be out of the user's control, such as work patterns and family structure. Therefore, the choice of car was focused on for this research. For products, it was not the buying of the product *per se*, but the choice to buy a new product instead of a second-hand one, that was considered.

Although the consumption practices chosen were highly volitional in a physical sense, it was assumed that they would nonetheless be subject to perceived or actual physical factors that were driving or constraining consumption. Additionally, drawing from the theoretical basis of this research, outlined in Chapter Four, it was recognised that these physical factors are largely a consequence of socio-cultural contexts.

An interview guide was designed to offer the interviewer a range of questions that could be asked (see Appendix 1). Adapting Loftland's (1971) recommendation on interview schedule creation, the interview guide was created by noting the key questions that would probe the desired realms of enquiry and then discarding any that were less relevant until a list of pragmatic size was gained. Only open questions were included to aid development of a relaxed and exploratory conversation, where the interviewees felt they could express their true opinions.

As recommended (Arksey and Knight, 1999), the order of categories was purposefully designed to lead the interviewee from accessible topics to 'warm up' the conversation and would discourage SDR, towards environmentally specific questions at the end. Therefore, the script started with holidays and ended with heating, which was deemed environmentally unmistakable. Finally, the interviewee was asked specifically about their environmental views and any action they were taking. Although it was intended to cover all the ESC categories, the aim was for the interviewer to let the interviewee lead the conversation in a fluid way, asking the next appropriate question when necessary. Additionally, the interviewer would "probe and prompt informants' responses in order to seek further elaboration, clarification, specific examples and so on" (Arksey and Knight, 1999:97). Therefore categories may be asked in a different order and some questions revised or ignored entirely. Where a category was irrelevant, for example, where no holidays were taken or a low-energy car was driven, the interviewer would use this as an opportunity to focus on the constraints to consumption.

5.4.2 Sampling considerations for the qualitative stage

In qualitative research, the ability of the individual respondents to provide appropriate input is more important than the number of participants (Arksey and Knight, 1999). Small sample sizes are also often normal due to the time and resource commitment required to interview, process and analyse qualitative data. In qualitative research, even an n of 1 can be used (Dukes, 1965; Baxter and Eyles, 1997). Here, the aim was to interview, in-depth, between 7 and 10 householders

within Devon, which was a number deemed to provide enough diversity without being overly resource intensive, as it was estimated each interview would last for around an hour. Due to the difficulties in locating HH, as described above, purposive sampling was used, utilising a variety of convenience sampling and snowballing. In order to reduce SDR, it was concluded that no participant who had close knowledge of the researcher's personal perspectives or on the exact nature of the research would be used.

GAP participants were not used because their household income was not known. Additionally, as the qualitative and quantitative stages were sequential, if GAP participants had been used in the qualitative stage, they would have not have been able to be utilised for the questionnaire stage, as their involvement in the former would have altered their response to the latter - and it was assumed that only few GAP respondents would have higher-incomes. Additionally, as they had participated in a GAP programme, they would not have provided the generalised insights for the quantitative instrument design that other interviewees would.

5.4.3 Implementation and analysis of the qualitative stage

In order to achieve the 7-10 householder sample, fifteen people were approached who were believed to be of higher-income and represented an even gender split and came from a variety of professions. Seven of these accepted initially (four females and three males). Once they had accepted these people were sensitively asked if their gross household income was above £40,000 and in all cases it was. In two cases the household consisted of a couple and in each case both partners specified the desire to be involved in the interviewing process. The pros and cons of including both partners in the interview were deliberated. Arksey (1996) notes that having more than one householder can help develop rapport more easily, gaps in stories can be filled in by the other participant and the information gained can be more trustworthy. On the other hand, one informant may dominate the conversation, sensitive issues between the individuals may be brought to the surface, distracting from the topic in hand or concentration on the interview itself may suffer. On balance it was felt that more useful information would be gained by

including two willing participants. Therefore, seven households and nine householders were interviewed in total (five females, four males).

To create a relaxed atmosphere about the respondents' private, rather than work role views, where possible, respondents were interviewed in their homes. However, a successful interview was the primary objective and many participants expressed a desire to be interviewed during working hours. All interviews were recorded with prior agreement of the respondents and then transcribed, verbatim, at a later date. All the interviews took place in May 2009 and lasted over one hour with the longest being just over one and a half hours. A break was scheduled after the car theme and before the home theme, which marked a move to more environmentally suggestive questions. After the interview the respondents were asked a few socio-demographic questions, for example, their age and number of children. Table 5.4 summarises the interviews undertaken.

Table 5.4 Qualitative interviews undertaken

Interview type	Number of adults in household	Number of children in household	Location	Gender and age of participant's
Couple	4	2	Participant's home	Female (36) Male (39)
Couple	2	0	Participant's home	Female (61) Male (37)
Individual	2	0	Participant's place of work	Male (54)
Individual	4	2	Participant's place of work	Female (42)
Individual	2	0	Participant's place of work	Female (49)
Individual	1	0	Participant's home	Male (41)
Individual	3	1	Participant's place of work	Female (53)

5.4.3.1 Ethical considerations

All appropriate ethical guidelines were adhered to, based on the University of Exeter's endorsed principle of 'doing no harm'. Respondents were made aware of the broad nature of the research and assured of confidentiality. Respondents were given the interviewer's details for any follow up-questions and advised they could withdraw at any point from the study with no explanation needed. Permission for recording was sought from all parties. Interview data held electronically was made anonymous and participants were advised that they could request a copy of their data at any time.

5.4.3.2 The qualitative analytical approach

Qualitative research has been described as “the interpretive study of a specified issue or problem in which the researcher is essential to the sense that is made” (Banister et al., 1997:2). This puts the onus on the integrity, insight and sensitivity of the researcher and acknowledges the need for rigor and intuition to maximise value from the data. It is vital that the analytical approach is chosen carefully, as commencing without a specific method in mind and explicit consideration of potentials and pitfalls, would inevitably result in missed opportunities and diminished results. This is important because, “reducing material to manageable proportions and abstracting certain types of information from it is fraught with difficulties” (Banister et al., 1997:1). A variety of analytical methods for qualitative data exist, and even when the apparently most suitable method is chosen, the actual process of retrieval and analysis may be dictated by a range of variables that can emerge once analysis has commenced.

In selecting the best method for analysis it was important to consider the nature of the data itself, the purpose of the data collection, the size of the survey and the depth and type of analysis required (Banister et al., 1997). Some methods of qualitative data analysis are less suited for the task because they are incompatible with either the purpose of the research or type of data collected. For example, discourse analysis is mainly concerned with the role of language where texts themselves are the objects of research, with the emphasis being on the role of language in the construction of social reality. Interpretive Phenomenological Analysis is a bottom up approach appropriate for small case numbers and intensive analysis, with a focus on how specific people make sense of particular phenomenon, normally significant life events (Giorgi and Giorgi, 2008).

Because the main objective of the qualitative stage was to identify themes and sub-themes that could be pursued in the quantitative phase through specific items, it was decided that Content Analysis (CA) would be the most suitable approach to analysing the data collected. Stemler summarises other views of CA as “a systematic, replicable technique for compressing many words of text into fewer

content categories (Berelson, 1952; GAO, 1996; Krippendorff, 1980; and Weber, 1990) and that it “also allows inferences to be made which can then be corroborated using other methods of data collection” (Stemler, 2001). Krippendorff describes it as “an unobtrusive technique that allows researchers to analyse relatively unstructured data in view of the meanings, symbolic qualities, and expressive content they have and in view of the communicative roles they play in the lives of the data’s sources” (Krippendorff, 2004:44). Although CA may be the method of analysis, it does not determine the exact technique to be used (Krippendorff, 2004).

There are a number of ways in which data can be reduced through CA, with perhaps the most common being themes. Thematic analysis is suited to this research because the themes or sub-themes identified could lead to questionnaire items. Even with the overarching unit of reduction decided, there are a number of ways in which thematic CA can be performed (Crabtree and Miller, 1999). Burnard (1991) for example, offers in detail, a fourteen stage approach derived from Glaser and Strauss’s “grounded theory” (1967). On occasions, the reduction of data into categories means it is possible to take a semi-quantitative approach where important themes are identified by frequency of reference (Stemler, 2001). For this research, however, the frequency of reference was not focused on as it the aim was to establish a topic of potential importance for the quantitative stage, where frequency would be tested.

Providing some clarity, Crabtree and Miller (1999) identify three prototypical styles within which they state all approaches can be placed: editing, template and immersion/crystallisation. The immersion/crystallisation style involves approaching the data in detail and with limited *a priori* views, therefore, this is most appropriate for unstructured interview data. The template analysis style usually involves *a priori* codes or codes, forming a template of themes. The editing style normally involves analysing the entire text a number of times with a few assumptions, for example, drawn from a literature review, and then organising observations into categories or themes. For this research an editing approach was used. Hence the analysis taken was a combination of inductive and deductive reasoning. Following Elliott and Gillie

(1998), the transcripts were systematically read and re-read with segments of interview coded to identify parts of each interview with major themes. The first two readings were skim reads without notes taken. The subsequent detailed readings involved the coding of sections of interview text into themes under the upper-level evaluation driver categories of experiential needs, functional needs and relational needs, as well as constraints (which were considered across ESC categories to allow comparison between behaviours in the quantitative stage and for parsimony).

As the goal was the identification of items, where appropriate sub-themes were created to further differentiate areas of consumption drivers and constraints. The thematic analysis within these categories was pursued in the spirit of being “goal free” (Scriven, 1991:56), however the prior literature analysis that has recently been undertaken, necessarily informed how the researcher developed the themes. Towards the end of the process where, when no new themes or sub-themes emerged, the themes were explicitly compared to the literature review and as Chapter Six will indicate, these were found to be similar on a number of occasions. Themes that were not present in the literature review were also found. Additionally, themes that fell outside of the evaluation driver categories were analysed in a purely inductive way as a secondary goal of the stage.

5.4.3.3 Conclusions of the qualitative stage

The analysis of the qualitative stage is presented in Chapter Six. The results underline that there are a wide range of reasons that people engage in ESC. These in turn relate to varying and multiple modes of need satisfaction, depending on the practice. A number of themes and sub-themes were identified as drivers for each of the three behaviours analysed (holidays, cars and products), and these were translated into item recommendations. Table 5.5 outlines the themes, sub-themes and item recommendations carried forward from the qualitative stage into the quantitative stage, for both drivers and constraints. For holidays, 12 themes were identified encompassing 15 sub-themes, or items. For cars, 11 themes and 23 items were identified and for products, 4 themes and 7 item recommendations were formed. Additionally, 8 constraint themes and 9 items were identified.

Table 5.5 Qualitative stage themes and item recommendations

HOLIDAYS			CARS			PRODUCTS		CONSTRAINTS			
Driver category	Macro themes	Item suggestions	Driver category	Macro themes	Item suggestions	Macro themes	Item suggestions	Macro themes	Item suggestions		
Experiential	Anticipation	To give me something exciting to look forward to	Experiential	Joy of driving	It is fun to drive	Newness and consumption	It is exciting to have the most up to date products	Time	I don't have the time		
	Stimulation	To provide stimulating experiences		It is exciting to drive	I don't buy new products if used ones are available		Money	I don't have the money			
		To find out how other people live					Experiential security	It makes me feel in control of my driving	I only buy new products when old ones break	Conflict with values	It wouldn't fit with my values
		To develop my knowledge of the world						It is a brand I am used to		I would feel guilty	
To experience a different lifestyle	Hobbies	It feels like it is well built	Matching	It is important to have products that match each other		Normative disapproval		My friends and family would disapprove			
Physical environment		To be in sunny weather	It is part of a hobby interest in cars	Identity and new versus	I am the sort of person who has up to date products	Identity	It wouldn't fit with my identity				
		To be in beautiful surroundings	Functional		Economy	It is economical	I am not the sort of person that buys used goods	Stage of life	I am at the wrong stage of life		
Functional		Relieve monotony		To take me away from the routine of life	It will last me a long time	Quality and second hand	I don't buy second hand products as they are normally of lower quality than new ones	Lack of enjoyment	In reality would not enjoy it		
	Alleviation of pressures	To alleviate pressure that builds up in my life from time to time	Comfort	It is comfortable							
		Relaxation		To relax						Space	It is spacious enough
		Hobbies		To pursue my hobbies							Security
Relational	Social interaction	To spend time with family		It is reliable	Environmental Impact	It has a low environmental impact					
		To spend time with friends									
		To interact with new people									
	Identity	To interact with people who are similar to me	Features				It has lots of accessories and special features				
Relational				Identity	It suits me						
						Status		It looks good			
									It reflects my gender		
	It shows I am not 'one of the crowd'										
It allows me to be faster than other road users											
		It is suited to my household's professional status									
			It is suited to my household's social status								
	It indicates that I am financially successful										

As outlined above, in addition to the driver and constraint results, a number of thematic insights that cut across the behaviours were identified. Due to constraints on document length and scope these have not been included in Chapter Six but can be seen in Appendix 2, and are summarised in Chapter Six.

5.5 The quantitative research stage: approach and implementation

This section will outline all the aspects of the quantitative research stage, other than the analysis of the results, which will be presented in Chapter Seven. The section will start with describing the measurement instrument and its overall structure, which encompasses the measurement of the concepts outlined in Figure 5.1. The questionnaire variables will then be presented in detail, drawing from the qualitative stage, as well as the literature review. Following this, the questionnaire pilot will be outlined along with a description of the resulting changes. Finally, the implementation approach and major considerations will be discussed, including details of the sampling approach chosen, and a description of how the instrument was administered.

5.5.1 Choice of measurement instrument and format

The aim of quantitative research is to gather standardised data from a particular population, normally from a sample. For these purposes, and in a social science context, a limited number of options for data gathering exist: A questionnaire can be designed which elicits responses on standard questions; observations of participants can be made; unobtrusive ways of gathering data such as electronic monitoring can be carried out, or experiments can be performed (Trochim, 2007; Creswell, 2003). In order to fulfil the objectives of the research a questionnaire was considered most appropriate as it would allow pre-existing ways of measuring the values and materialism to be utilised and enable a wide range of data to be gathered from each respondent.

Questionnaires have limitations over other forms of quantitative data gathering, as outlined by May (1997). Particularly, questionnaires force participants to respond to

a predetermined scale of options about specific concepts. This relies on questions being interpreted as intended. Although care was taken to create valid items which will be universally interpreted by the sample, it is acknowledged that interpretation of meaning from words or sentences is ultimately subjective and there is a strong possibility that some people's interpretation of an item will vary from another's. Additionally, questionnaire data cannot be verified by actual behaviour but must be recognised as the respondent's individual perspective alone. These issues can be mitigated against, to some extent, by allowing additional items to be added by respondents, and for SDR to be recognised and minimised, thereby increasing the validity of behavioural responses. Both these strategies were used in this research, as will be discussed in the sections below.

5.5.1.1 Design level decisions and instrument structure

HHH are known to be less likely to respond to requests for personal information (Leslie, 1970) and therefore influences on response rate needed to be carefully considered and balanced with other factors. It was felt that covering a broad range of issues, rather than narrowly focusing on one aspect, was important for developing an initial base of insight and future research direction and this meant that a relatively long questionnaire format was necessary: 8 pages post-pilot and 10 pre-pilot.

Although it was recognised this may reduce response rates, evidence on the influence of questionnaire length is inconclusive. What constitutes a long questionnaire is not precisely defined (Burchell and Marsh, 1992). However, there is a long held view that questionnaires, even over one or two pages in length, may be too long for some audiences and reduce the response rate or quality (Leslie, 1970). The literature showed that others believe length does not have to be a problem (Dillman, 1978), even extreme length (40-50 pages), as long as the questionnaire is presented as an integrated whole and fits the stated purpose of the study (Leslie 1970). Furthermore, some have also commented that longer length can increase the importance of the study and therefore increase the quality of response (Bradburn, 1977).

Efforts were made to design the instrument in a way which reduced the issues with longer length as will be discussed below. The following sections outline the specifics of the questionnaire structure as it went into the pilot phase.

5.5.1.1.1 Covering letter

A covering letter was designed to maximising response rates, by making completion of the questionnaire attractive to the respondent (see Appendix 4). Due to the initial contact made with Teignbridge District Council, there was the possibility of using their logo, but it was decided that this may reduce the likelihood of people answering personal consumption questions and disclosing their income and asset levels. Instead, only the Exeter University and Great Western Research logo were used. Dillman (1978), supports the perspective that respondents are not favourable to phrases such as "this is for my dissertation/PhD" and as such 'We' rather than 'I' was used to give confidence to the respondent that the study was one that had the input from a number of academics, although the broad PhD context was declared.

The potential respondents were encouraged to feel they had been carefully chosen by words in bold stating, 'only a small number of households have been selected'. It was debated as to whether to declare selection by income level. However it was considered unlikely this would increase response rates and could encourage responses geared towards the affluent identity, or efforts to actively dismiss it.

In order to reduce SDR, focus on environmental issues was downplayed and instead, the purpose of the research was summarised as consumption and lifestyles. A freepost envelope was included to reduce the barriers to response and this was emphasised in the introductory paragraph. Pre-pilot, the covering letter gave an overview of questionnaire instructions, emphasising the need for honest personal opinions and highlighting the fact that room is given for additional qualitative points to be made, and signposting a blank page at the back of the questionnaire, if there was not enough room in the main body. Post-pilot this was moved to the introductory text.

Three sections concluded the covering letter. One detailed the voluntary and confidential nature of the questionnaire, specifically covering the right to withdraw, assuring anonymity and non-commercial use of the data. The second gave details of a prize draw. A prize draw with three gift voucher prizes was considered a cost effective way of increasing the likelihood of response. Although the effect of prizes is uncertain (Porter and Whitcomb, 2004), the £45 cost of the incentive and low administration burden was considered a worthwhile risk, if it would increase responses even slightly. Although the sample was higher-income, it was expected that this would not significantly reduce the role of a prize as a psychological incentive. Lastly, there was a section enabling the possibility for future follow-up interviews. Although it was not anticipated that there would be the time available as part of this study, it was considered that it was worthwhile gathering the details of those who may be willing to participate at a later date. The personal detail box served the dual purpose of enabling contact details to be gathered for the prize draw.

5.5.1.1.2 Introductory text

Prior to the pilot stage, the introductory text was a very short paragraph thanking people for their participation and asking for all questions to be answered. Post-pilot this was extended, with the addition of the questionnaire instructions that were moved from the covering letter, as detailed above.

5.5.1.1.3 Main body of the questionnaire

The questionnaire (Appendix 4) was designed in a number of clear sections labelled A to G. The headings were boxed and shaded, clarifying where a section began and ended. This was to give some sense of clarity and structure and enable people to easily return to the questionnaire from time to time if necessary.

Following Leslie's (1970) recommendation the number of pages was reduced to a minimum by using a small, yet clear, font and decreasing the margins of the pages. The importance of warming up with easy questions and moving on to more difficult questions is widely recommended (Fowler, 1993; Borque and Fielder, 1995) and therefore the questionnaire started with an initial warm up question which asked about the relative importance of ESC categories.

The questionnaire moved to consumption specific categories testing behaviour, drivers and constraints. As with the qualitative stage, holidays were used as the initial category as a fun topic, which would put people at ease with the questionnaire and therefore act as a prolonged warm-up. After the category level sections, psychological orientation questions were asked covering the theoretical scales measuring values, materialism and identity as well as environmental concern, and finally covering socio-demographic questions. It was concluded that by reserving more personal questions to the end, respondents, realising there were no 'risky' questions, would feel more comfortable giving personal information such as income and asset levels. The high response rate for these personal questions, as outlined in Chapter Five, suggests this strategy was successful.

For the large majority of the questions, Likert-type items or scales were utilised. For clarity, and in line with Likert's original conception, the term 'Likert scale' will refer to a scale of items measuring one underlying concept, 'Likert-type items' will be used to refer to items which utilise Likert's response options but which are intended to be analysed at an item level rather than in a scale (Clason and Dormondy, 1994) and response options will be termed the 'response range'.

All the psychological orientations (Objective One) have been measured using pre-existing Likert scales except for environmental concern as discussed in Chapter Two (2.3.4.1). All the drivers and constraints of consumption (Objective Two) have been measured using Likert-type items, with each item representing a different concept. Although these items were grouped into experiential, functional and relational for the ESC categories of leisure flights and large-engine cars, this was for theoretical purposes only, rather than representing a scale.

Although five options with a neutral point was the original design, Likert left both the response descriptors and the number of options open to adjustment. Hence, ranges from three to over eight have been recorded, variously labelled (Clason and Dormondy, 1994). To increase reliability, and following Alwin and Krosnick (1991), the options were fully labelled in all but a select few cases. It was decided that only

the original 5-point option would be used. Although this suited the pre-existing materialism scale, it presented an issue with the values scales, which is normally measured using a 9-point range. This will be discussed in Section 5.5.1.2.1 below.

Details of the measurement of all key variables will be outlined in detail in Section 5.5.1.2.1 below. To increase confidence in the validity of the items chosen, and to mitigate some issues with surveys discussed previously, each set of items had an 'other' line added, where the respondent could add an additional item and then apply a Likert score for it. This was applied to all scales, including the value scale, but not for the materialism and identity scales, which were designed as agreement with a specific statement, rather than a list of items with an overarching theme.

Whether to include questions specifically about household wealth was carefully considered. It is known that including income can reduce response rates, which was one reason prompting plans to include the question in the 2011 Census to be dropped (Johnston, 2008), although others have found response rates are not affected (Shah et al., 2001). Given the purposive nature of the sampling, which will be discussed in Section 5.5.3 below, it was felt that it could be assumed respondents would be likely to fall into the higher-income category. However, because it was important to be sure the sample population was accurate, the income question was included. Although a free question was most desirable it was recommended that category tick boxes were used as this was less personal and therefore more likely to elicit a response.

The questionnaire was split into 7 sections, covering measurement of all the factors detailed in Figure 5.1. This overall structure remained the same after the pilot with only changes within the sections being made. The pilot process and resultant changes will be detailed in Section 5.5.1.3. Here the overall structure will be outlined with the changes made as a result of the pilot summarised. Appendix 3 outlines the purpose and method of each question in the final post-pilot questionnaire. The final questionnaire is available in Appendix 4.

Section A

The first part contained one question assessing the relative and absolute importance of all the ESC categories being studied. This was positioned at the beginning as was a warm up question as it was considered a relatively 'easy' question and of a macro nature.

Section B

The second section dealt with leisure flight consumption for long-distance, European and domestic holidays. Domestic holiday questions were removed after the pilot, as outlined in Section 5.5.1.3.

Firstly, the number of holidays taken per year of each type was questioned. This formed one part of the calculation of energy impact of consumption of leisure flights. The exact process taken for estimating energy consumption for leisure flights is described in Section 5.5.2.4 and Appendix 5.

Secondly, normative levels of consumption were addressed by asking comparison to others on a similar income, an approach also taken by Gatersleben et al. (2002). The section then focused individually on long-distance, European and domestic holidays. Each of these sub-sections started with a question about the normal mode of travel to the holiday destination in order to establish if travel is normally by air, which was the second component needed to calculate estimated energy consumption from leisure flights.

Finally, respondents were asked about their ideal number of holidays and then the constraints to taking that ideal number were tested using the standardised set of constraint items (Section 5.5.1.2.3). The last part of the section tested drivers of holiday-taking, with respondents being asked which type of holiday best fulfils the driver in question. The final set of items used to test holiday drivers, pre-pilot, will be described 5.5.1.2.2 below.

Section C

The third section considered large-engine car consumption. Details of all the cars in the household were requested including car engine size and miles travelled, in order to create an estimated measure of energy consumption from cars. The exact process taken for estimating energy consumption from cars is described in Section 5.5.1.2.4 and Appendix 5. If the household had more than one car, respondents were asked to indicate which car they preferred owning most, and this was the car from which the next two sections - drivers of car ownership and comparison with others, were derived. The final set of items used to test the drivers of car consumption pre-pilot is outlined in Section 5.5.1.2.2. below.

A question on the respondent's ideal car was then posed in order to understand what their relative energy consumption would be if all barriers were removed. As it was recognised that the relative power of this car might not be apparent from the answer given, respondents were asked to describe this ideal car relative to theirs. Four other items (price, size, newness and prestige) were included alongside power in order to reduce drawing attention to the power aspect and because these also held interest for the research. Finally the constraints to owning the respondent's ideal car were tested using the standard set of constraint items.

Section D

Section D considered product consumption. Firstly, the respondent's approach to buying new durable goods was tested followed by the consequences of all constraints being removed. The respondent was then asked to indicate the current level of household consumption of new durable products. This was measured using category boxes from zero to more than 50.

By including a very large range it was felt people would be less embarrassed to indicate if they bought a large number, therefore reducing SDR. The number of products currently consumed was used to estimate the level of product consumption. The estimate of respondent's aggregate energy use did not include products, owing to the wide variability of product types, and lack of data on embodied energy in products.

Respondents were then asked to compare their level of consumption with others on a similar income to estimate normative consumption. The ideal level of new durable product consumption was then questioned using the same categories as for actual consumption. Finally, the constraints to consuming the desired level of products was tested using the standardised response items created.

Section E

This section was designed to test values, materialism and environmental concern. The method of measuring these concepts is outlined in detail in Section 5.5.1.2.1. below.

Section F

This sixth section tested adherence to the affluent and the environmental identity. The method of measuring identity is outlined in detail in Section 5.5.1.2.1. below

Section G

Section G was the final section and posed the socio-demographic and other clarifying questions. Age was assessed using five categories. Gender was tested with a tick box. Working status was tested using seven options adapted from the Census (2001). Occupation was tested using an open text space. Occupation was not considered necessary for any particular enquiry but may have been a useful way of interpreting the data. Formal qualifications were tested using six categories from 'no qualifications' to 'higher degree'. Although vocational qualification was put after first degree in order on the questionnaire the orders were reversed for data analysis, putting a degree as a higher form of qualification.

Respondents were then asked how many people lived in the household, excluding themselves, using an open text space, and then asked to detail numbers across six categories of ages from babies to 75 and older. As well as detailing the structure of the household, this would allow-energy use results to be calculated on a per adult basis.

The total approximate gross income of the household was then requested using six categories. The lowest category was under £39,999, which would indicate if someone fell outside of the HIH bracket. The highest category was 'over £300,000'. Assets were not included until the post pilot stage and were measured across six categories from '£0-74,999' to the highest category of 'over £1,000,000'. The newspaper that the respondent most associated with, was asked as a further socio-demographic indicator, although this is not reported on in this thesis as, on reflection, it proved not to be core to the analysis in hand.

In order to provide a more comprehensive estimate of energy use, respondents were then asked what their total average annual fuel bill was, for gas, electricity and heating oil. Finally, in the pre-pilot phase, self-attribution to a class was tested giving the options of working class, middle class, upper class or classless. Finally, a box was given for any further comments to be added. The respondent was then thanked, reminded of the importance of it, asked to recheck that all the questions have been answered and then reminded to return it in the prepaid envelope. Finally respondents, were signposted again to the box on the front page requesting they should fill in if they want to be included in an interview.

5.5.1.2 Measurement of key variables

The key constructs and variables measured pre-pilot, but with reference to changes made by the pilot, will now be outlined. The measurement approaches are all drawn from literature as discussed in detail in Chapter Two. Firstly the theoretical constructs will be outlined followed by the consumption specific drivers and constraints and finally behaviour.

5.5.1.2.1 Measurement of psychological constructs and assumptions

General values

Following Stern (1995) and subsequently De Groot and Steg's validation of three distinct environmentally-significant values, as outlined in Chapter Two: biospheric; altruistic and egoistic values, it was decided that these three values should be tested using the short 13 item scale developed by De Groot and Steg (2007, 2008) and utilised in a similar form by Gatersleben et al. (2009). As these values were

derived originally from Schwartz's values scale (SVS), they traditionally employ the 9-point Likert response range, or more accurately defined as a 7-point 'importance' response range, with two anchor points at the beginning of the range where respondents could indicate if a value was -1 (opposed to my values) or 0 (of no importance at all).

Although this is the standard way of measuring the SVS, other ranges of options have been successfully used (e.g. Aoyagi-Usui and Kuribayashi 2001) and additionally, in respect to statistical bivariate analysis "Likert (1932) makes it clear that origin and width of scale (*range*) are not relevant" (Clason and Dormondy 1994:33), in other words the same or very similar correlation results should be gained, regardless of the number of options available to respondents.

Additionally, discussion with a key researcher in this area revealed that the testing of scale reliability on a 5-point response range would be of interest. Therefore, in order to increase consistency for the respondent, as outlined in Section 5.5.1.1.3, on balance it was considered most appropriate to utilise the 5-point range (1 = extremely unimportant, 5 = extremely important).

As per Schwartz's original measurement (1992), the SVS was preceeded with the guidelines that each of the values should be considered in terms of the extent to which it is "a guiding principle in your life". As discussed in Section 5.5.1.1.3, in order to offer respondents the opportunity to add any other value they thought was important to them, an 'other' item space was added to the end of the scale. Respondents were asked to specify what the additional value was and then to rate it using the Likert response range.

Specific values - Materialism

Materialism was measured using Gatersleben and colleague's slightly extended version of Richin's materialism scale (Gatersleben et al., 2009). This included Richin and Dawson's 18 item scale (1994), encompassing eight items which were worded against materialism and therefore were to be reversed for analysis. In addition Gatersleben and colleagues included four items from Belk (1985) on non-

generosity making a 22 item scale. The 5-point Likert response range was used was in line with Richin's and Gatersleben et al.'s (1=Strongly disagree, 5=Strongly agree). As per Gatersleben and colleagues, the scale was employed as one scale measuring materialism with the sub-scales of success, happiness and centrality not intended to be analysed. Richins and Dawson (1992) specifically tested their scale for SDR using the Marlowe-Crowne scale (Crowne and Marlowe, 1960) and found it was not significant.

Specific values - Environmental Concern

The literature review indicated a range of approaches to testing environmental concern and highlighted the potential issue that this was most commonly based on testing concern about nature (plants and animals). However, with rising awareness of the issues of energy security and of the issues of climate change as they relate to the consequences for environment, human society and individuals, that these two issues may constitute separate areas that are also normatively associated with environmental concern. Therefore, environmental concern was measured as comprising three separate types of concern: environmental protection concern, climate change concern and energy issues concern. To test this, the standard measurement of attention towards issues was used drawing directly from the Standard Eurobarometer from Spring 2007 (European Commission, 2007), whereby a list of possible issues facing the country is presented and a maximum of two dual ranked answers are allowed. The standard 14 item measure, used by the Eurobarometer, includes both protecting the environment and energy issues, therefore only one option, 'climate change', was added resulting in a list of 15 generalised issues which could be seen of importance to the UK.

Identity

As the analysis of identity in Chapter Two concluded, there is no standard way of assessing identity, particularly as it relates to environmental issues, and even less so in relation to affluence. Often the question is posed in a one dimensional way i.e. I am a ...(identity in question). As the interaction of the affluent and environmentalist identities is likely to be significant to ESC and particularly significant to this research, it was concluded that it would be of benefit to the field if

an identity scale testing both identities could be created, based on the available literature, and tested. In order to be able to measure adherence to both the environmentalist and affluent identity, and in a way that they are directly comparable, it was decided that to design a scale that could be applied to both, was most appropriate.

The literature suggests there are few key indicators of adherence to a particular identity that would be important to measure. Firstly, self-classification, which denotes personal identity adherence. Secondly, reflexive recognition, that others classify you as a particular identity, which indicates social identity adherence. Thirdly, an affinity with others who are judged to hold the identity, which further indicates a social identity adherence. Fourthly, a general assessment of the identity as being positive which relates to the fact that people are more likely to be motivated to act in accordance to identities that are seen as socially positive. Lastly, that action is taken as a result of that identity, therefore indicating the search for identity congruence, for example, making career decisions in line with an identity. As outlined in Chapter Two, there is a strong indication that all of these will contribute to the extent to which someone adheres to an identity, and in a scale they should give a reliable indication of the extent of someone's orientation towards a particular identity.

On the basis of these aspects identified, a five item Likert scale was created using a 5-point Likert response range (1=Strongly disagree, 5=Strongly agree) using the wording:

- I see myself as an (environmentalist/financially successful person)
- Other see me as an (environmentalist/financially successful person)
- I find I relate well to (environmentalists/financially successful people)
- In general, it is positive to be an (environmentalist/financially successful person)
- Many of my career decisions have been motivated by the desire to be an (environmentalist/financially successful person)

The term 'financially successful' was used to represent the identity of someone who feels they are relatively financially affluent in relation to others and the term 'environmentalist' as used to represent an identity of someone who cares relatively strongly about environmental issues.

5.5.1.2.2 Measurement of drivers and constraints

Holidays

The items to be used in the questionnaire to establish the drivers and constraints to leisure flights, large-engine cars and new durable products were decided as a result of the qualitative stage as presented in Chapter Six. Additionally, a small number of additions were made. For holidays, four driver items were added. Freedom is considered by Max-Neef (1991) to be a basic need and is something the literature indicated may be important for driving the taking of holidays in general and could be important for those taking leisure flights. Therefore, although no evidence of the need for a sense of freedom came from the qualitative research, it was felt that it was important to test for this fundamental need and therefore the experiential item, 'to make me feel free', was added.

The literature also indicated that holidays provide the basis of social conversation (McCabe, 2010). Therefore an item: 'to provide something interesting to share with others', was included. Self-discovery is also a potential driver of holidays revealed by the literature review and as this may be symbolically connected with far-away places and therefore, 'to find out about myself', was added. Finally, in order to more directly assess the role of income as a driver and also to test status drivers of holiday choice that were identified in the literature, but not captured in the existing items, the identity item 'because I can afford it', was included. These four items in addition to the 15 created through the qualitative research, resulted in a final inventory of 19 items in the pilot phase.

Cars

Three additional drivers were added to the items for cars that had already been identified through the qualitative research. As was identified in Chapter Three, an added aspect of status reasons for owning a high-powered car is that it is viewed

with respect from others, in terms of its ability to travel at higher speeds and overtake, but also because of the respect from derived symbolic properties such as the styling of the car and its cost. Therefore an item 'to command respect from other road users was added' as a status driver within the relational category. To further test status, two further items were added which relate to the ability of the car to initiate a positive response from others, 'it is attractive to others' and 'it attracts attention'. With the addition of these three items there was a total of 26 items in the pilot phase to test the drivers of large-engine cars.

Products

For the product category two items were added to those from the qualitative phase. Although no evidence of a relationship with older products was found during the qualitative stage it was felt that the affective drive to purchase second-hand products, because of the embedded history in them, was a distinct issue from buying these for other reasons, such as monetary or resource frugality. Therefore, the item, 'I buy products that have a history' was added. Additionally, the literature review suggested that the excitement and anticipation of newness was an important feature of consumerism, therefore the item, 'when a product breaks it is a good excuse to go shopping for a new one', was felt to capture the anticipation of the excitement of the shopping process. Therefore there were a total of 9 items in the pilot phase.

It was recognised to be likely that the term 'new durable products' could be interpreted in a wide variety of ways. To help reduce variability, the term 'new durable products and clothes' was used to specifically include clothes which otherwise may not be considered a durable good. Additionally, a description was added to the section which stated that durable goods "include a range of items like washing machines, MP3 players, bags and cutlery".

Furthermore, respondents were guided by a recognition that their approach may vary by product but were asked for responses that were generalised across products using their 'initial instinct'. As consumerism is a topic that is particularly sensitive to SDR, three items were worded in a reversed way for the questionnaire.

5.5.1.2.3 Measurement of constraints

As discussed in the literature review, there were a number of key constraints that could be applied across all consumption practices. It was felt on balance that testing these more generic constraints would make interpretation and recommendations simpler and allow for cross comparison between the ESC categories. All the constraint items developed through the qualitative stage, as outlined in Chapter Six, were included in the questionnaire.

5.5.1.2.4 Behavioural measurement

Although recognised as inadequate, research into consumption tends to rely on reported consumption behaviour rather than incorporating actual behavioural measurement. This is due to the expense and inherent difficulties of making exact measurements. The important exception to this is the direct energy research, much of which was undertaken in the 1970's and 1980's, which was heavily funded by the US government in the wake of the oil crises. This experimental psychological research was narrow in scope and incorporated pre and post energy meter readings. However, for the current research, where product consumption, leisure flights and car ownership are being investigated, reported behaviour was the most appropriate means of gathering behavioural data. The key issue with self-reported behaviour is the risk of a significant difference between reported and actual behaviour.

As cited by Barr (2001), a number of studies have reported large gaps between actual and self-reported behaviour (Heberlein and Black, 1981; Warriner et al., 1984; Corral-Verdugo, 1997; Diekmann and Preisendorfer, 1998; Gatersleben, 2000, 2001). This could be for a variety of reasons which have been outlined in Olsen 1981 and Gatersleben et al. 2002, for example, lack of knowledge or failing memories, however, one of the biggest causes of the discrepancy is SDR (van de Mortel, 2008). In much sustainable consumption research the study is designed and presented to respondents to be specifically about pro-environmental behaviours, which is likely to result in elevated responses of behaviour undertaken.

For this research, which focuses on ESC, the risk was that behaviour is under-reported. However, as this research has been designed to minimise SDR it is hoped this will improve the accuracy of the self-reported behaviour. In order to specifically reduce the risk of under-reporting, the questionnaire avoided asking, 'how many European holidays do you take by plane a year?', which would highlight the flying aspect of the question and instead respondents were firstly asked, how many holidays are taken to European destinations, and later asked what the main mode of travel tends to be. Additionally, the question on household fuel use was specifically left to the end of the questionnaire.

In order to estimate the overall impact of respondents' consumption behaviour, aggregated energy use across categories was calculated from the individual consumption category data. Olson (1981) has highlighted issues with researchers combining self-reported environmental behaviours into indices without considering differences in their actual environmental impact, thereby creating unrealistic measures. In order to address these risks and standardise the data between categories, all behavioural data were transformed into a kilowatt hour (kWh) figure which was directly proportional to a carbon dioxide measure, through a standard conversion figure provided by DEFRA (DEFRA, 2007c). This was performed for leisure flights, energy use from cars and household fuel use which formed the aggregate energy figure.

Due to the highly variable nature of embodied energy from new durable product consumption this was excluded from the aggregate figure, with the data from the self-reported consumption figure forming the behavioural figure directly. Appendix 5 details the process and assumptions behind the kWh figures. For the purpose of performing correlation analysis between energy consumption behaviour and the other individual responses of the householders, the energy figures were converted into a per capita figure based on the number of adults in the household, which reduced the issue of unrepresentative high consumption figures for those individuals who were part of large households.

The same process was taken for products whereby the lowest of the range of the box ticked, was divided by adults in the household. The approach taken of converting reported behaviour to a standardised measure of energy and also summing these figures to get an aggregated behavioural figure was an approach taken by Gatersleben et al. 2002, based on careful consideration of the self-reported behaviour and drawing from Olsen's (1981) recommendation to avoid common pitfalls of behavioural measurement.

5.5.1.3 Piloting the questionnaire

Veal (1997) has put forward nine reasons for piloting a survey which are: to test wording, layout, the sequencing of questions, the layout and how easy it is to work with, to train fieldworkers, estimate interview times and response rates and to test analysis processes. In this case the fieldwork and interview aspects were not relevant, but all other aspects were important.

There were a number of questions that required testing and on this basis a two page pilot feedback form was created containing 12 questions (see Appendix 6). It was designed to establish: how long the questionnaire took to answer and if it required breaks; general reactions to the covering letter; whether the prize was an incentive worth using; whether the explanations of confidentiality established enough confidence in the respondent; reactions to the questionnaire; if the instructions were clear; if the layout was clear and attractive; if any questions were ambiguous; if any questions were objectionable – which was particularly important for understanding how the income and asset questions might be received; what questions were seen as difficult to answer; whether the five point response scale was appropriate; if any section received too much attention or not enough and finally, if any aspect were to be removed what should it be – this was asked in mind of the likely need to reduce the length of the questionnaire. Space was also given for any other comments to be made. The mailing of the questionnaires was followed up by a face-to-face or telephone discussion to further enhance the information gathered from the pilot process.

Six people were asked to complete a questionnaire, none of whom were to take part in the main research process and all of whom were considered likely to be HH. Four people accepted and this was a number considered broad enough to give a range of opinions appropriate for the pilot. In order to gather the perspective of a GAP participant, contact was made with a householder who was outside the South Devon area. One other respondent was chosen particularly because he worked on questionnaire administration at the University of Exeter, and therefore was highly experienced in questionnaire design and would give a different, but useful, perspective on the instrument.

A number of adjustments were made as a result of the pilot. The questionnaire took between 20 and 45 minutes for respondents to complete and only one person took a break between questions. Two people commented that it was 'quite' and 'very' detailed and another that it was quite long. This indicated that the questionnaire should be reduced in length where possible, but that it was not overly long. Positively, it was commented that it was interestingly worded which appeared to compensate for the length. Everyone was happy with the five point response scale and one person noted any longer would have "made it difficult". One person noted that class was a potentially contentious question.

As a result of the pilot and further considerations, the following major adjustments were made to the questionnaire. The final questionnaire can be viewed in Appendix 4:

Adjustments to the covering letter and introductory text

- Confidential added to first sentence
- Offer to supply summary results included
- Details on the questionnaire structure moved to the introductory text of the questionnaire itself
- Confidentiality was made bold at the end of the letter
- Personalised sign off and signature were used.
- Contact address at the University included
- Instructions on filling in the questionnaire moved to the introductory text

Adjustments to the realms of study

- Domestic holidays removed – to reduce length and to focus on the high-energy consumption specifically
- Assets were included as an additional area of socio-demographic questioning using a six category option from zero to over 1,000,000. Assets and income are generally strongly correlated and as such both can be seen as measures of economic wealth (Davies et al., 2006) – but income is the socio-demographic measure usually used. It was considered that assets may play a different role regarding energy use that has not been investigated as yet.
- Class was removed as this is a potentially contentious issue and the income and asset questions were more important to be retained.

Adjustments to items

As a result of the pilot it was recognised that the length of the questionnaire needed to be reduced, so additional efforts were made to eliminate items, particularly where they were in large part covered by another question or could be merged. This resulted in the following changes:

Holiday drivers

- To spend time with friends and to spend time with family were merged into one item: to spend time with people close to me
- To develop my knowledge of the world was deleted as it was incorporated in other items

Car drivers

- It is suited to all terrains was deleted as it was incorporated in other items
- It allows me to be faster than other road users was deleted as it was incorporated in other items

Adjustments to layout

- For clarity the lists of items were changed to alternating italics and non-italics to aid clarity.

5.5.2 Implementation and analysis of the quantitative stage

Questionnaires can be administered in a number of ways, such as by telephone, by post, on the street, by internet or during a face-to-face interview, and either a self-administration format or an interviewer administration approach can be employed, the key decision factors being reliability and feasibility. For this research a postal, self-administered questionnaire was chosen. Restrictions on resources precluded face-to-face administration and additionally, this would have had implications for those responding, as an interview would have precluded those wanting anonymity and would have required greater participant commitment. An internet questionnaire was considered, but the specific requirement of sampling those households with higher-incomes, and from a specific geographic area, meant that it was likely that a large number of responses would have been invalid. Furthermore, it was recognised that those in the higher-income bracket were likely to be older and therefore there may have been accessibility issues with an internet-based approach.

An on-street questionnaire format would have not been possible due to the length of the questionnaire and the depth of thought that was necessary for answering the questions, and which a street environment may have made difficult. A self-administered questionnaire postal format, on the other hand, could be delivered to a large number of people and gave people the flexibility and time to consider if they wanted to respond and when to answer the questions.

Self-administered questionnaires delivered by post are also recommended to reduce SDR (Wiseman 1972; Nederhof, 1985). It has been noted by Nederhof, for example, in a paper on reducing SDR that, "In mail surveys, where results cannot be biased by interviewer presence and anonymity seems more assured, data are generally found to be less influenced by social desirability than are results of telephone or face-to-face interviews." (1985:272). Therefore this format is a particularly useful approach given the potential issues of SDR in this study (see Section 5.3.4).

Furthermore, some have argued that the reliability of responses are reduced where there is contact with the interviewer (Converse, 1964). Converse argued that this is because respondents are inclined to offer firm opinions where they hold none, in order to comply with the perception that those with opinions will be more respected. Others disagree that this is one of the key sources of reduced reliability in responses (Alwin and Krosnick, 1991).

5.5.2.1 Sampling considerations and strategy for the quantitative stage

A quantitative approach relies on collecting standardised data about a particular population, in order to understand something statistically about that population. Unless the entire population in question can be identified and data gathered from them, then the data from which conclusions will be drawn will be a sample of that population. In this case, the population is households with incomes in the top 25% income bracket, which relates to a household income of £40,000 and above. The sample area studied was South Devon and within that the Shaldon, Dawlish and Bovey areas of Teignbridge, as discussed in Section 5.3.3.

In order to reduce sampling error and provide sufficient power of analysis the quantitative stage requires a sample size that is of sufficiently large. However, the exact ideal size is variable depending on the specific context and accuracy, and the amount that is known about the population in question (Gardner, 1976; Fowler, 1988; May, 1997). In this case very little is known about the nature and structure of the higher-income population under study and therefore estimating a sufficient size for generalisations about the population to be made, is difficult. As discussed below, it was known that response rates could be low. This combined with the large number of specific questions being asked, which would only be relevant to sub-groups of respondents, meant that it was accepted from the beginning that the study would be able to provide important indications for future research, but may not be able to provide robust generalisations about the oblique population in question based on the use of multivariate statistics.

By definition, there was assumed to be only a 25% probability of locating a HIH by chance and therefore, given the single researcher format and monetary resource constraints of the research, it would have been imprudent to carry out probability sampling, where the whole population was contacted and therefore every household earning £40,000 or over would theoretically have the same chance of responding and the valid response rate would low. Therefore purposive sampling was a necessity.

There were limited options available to purposively locate the populations within the sample areas. For example, there was an option to locate and sample streets or households based on the value of the houses. However, this was excluded as an option due to the difficulties in classifying high-value streets correctly and the fact that house value alone may not have been a valid indication of income. It was decided that the best way of gaining a reasonable sample size and maximising the amount of the population that would have the opportunity to respond, would be to purchase a sample list from CACI's PayCheck database, which was compiled specifically on the basis of income and provided the data by postcode, thereby allowing postal delivery.

As well as being able to target higher-income groups, the decision to contact people by post was also based on the known inclination for people with more money to practice heightened privacy, regarding disclosing data about their personal lives (Banks et al., 2000; Davies et al., 2006). Delivering the questionnaire by post provided a more distanced approach compared to face-to-face delivery. Additionally, a postal approach would reach as many of the population as possible, with an assumption that this would reduce the overall response rate, compared to contact by foot, but would increase the overall response compared to that which could be contacted by foot by one researcher.

CACI allocate all postcodes to a mean household income band using a number of large data sets covering more than 15 million individuals (CACI, 2009). The lack of other publicly available alternatives is underlined by the fact that local government

resorted to purchasing CACI PayCheck data to understand more about child poverty (Devon Strategic Partnership, 2009).

CACI confirmed that the number of people in the three neighbouring sample areas considered by PayCheck to be in the £40,000 and above income bracket came to a total of 1226, with 504 in Bovey, 530 in Dawlish and 232 in Shaldon. Based on the approximate household population figures presented in Section 5.3.3, this indicates that fewer people fell into the UK higher-income household bracket than 25% (15% Bovey, 15% Dawlish and 21% Shaldon).

As this was just within a financially feasible number to contact by post, if a one-stage contact was made, it was decided that all those considered by CACI to be in the higher-income bracket should be contacted rather than restricting the number to under 1000, as initially considered. This meant resources were not available for follow-up reminders, but it was concluded that contacting more people would be the best way to increase the actual sample size, rather than investing the financial resources on follow-up reminders or face-to-face interaction with a smaller mailing list who may resist the attention (as discussed previously). It was decided that, to increase the response rate and give the questionnaire more authority, pre-paid envelopes would be enclosed. Although all those identified by CACI as being the sample population within the sample areas were contacted, it was recognised that PayCheck could not be considered census or probability sampling, as its methodology was unlikely to provide a sampling frame where every HH was included.

The GAP participants were necessarily contacted purposively, using a list of 86 participants on the Small Change programme, as detailed in Section 5.3.1. The sampling approach was restricted by the particular requirements of GAP and it was recognised that the small database, combined with the likelihood of a standard representation of HH (25%) or 15% if the CACI indications were accurate, meant there was a risk of a very low return sample. As there was an overlap between the GAP participants and the general Dawlish population, and because people may have moved location from Dawlish to one of the other general sample areas, it was

important to ensure mutual exclusivity between the general sample and the GAP sample. In order to achieve this, a question was added to the survey which specifically asked if the respondent had been part of a GAP programme. Those that indicated they had been part of a programme would be considered part of the GAP sample rather than the general survey.

CACI offered the option of having addresses personalised to the last known occupier at that address, or just containing 'head of household'. Although 'head of household' is a rather old-fashioned way of addressing a letter, it was felt that this would be a better option on balance because it would reduce the number of questionnaires that would have been left unopened if the addressed person no longer lived there. Furthermore, it would grab attention as it is, these days, a rather unusual heading. To gain attention further it was ensured that a large Exeter University stamp would be put on the envelope prior to sending. In the likely event that some people would retain the covering letter, which contained the address of the respondent, the questionnaires were individualised for each sample, so that the responses could be accurately allocated. The questionnaires sent to each of the three sample areas and GAP were differentiated by a unique small symbol being placed on each page of the questionnaire, with one sample area left blank. This complicated administration but was felt necessary to ensure samples were produced correctly. The questionnaires were sent on the 8th October 2009.

5.5.2.2 Ethical considerations

As with the qualitative research, all appropriate ethical guidelines were adhered to, based on the Exeter University endorsed principle of 'doing no harm'.

Respondents were made aware of the broad nature of the research and assured of confidentiality. Respondents were given the researcher's details and advised they could withdraw at any point from the study with no explanation needed.

Respondents were advised they could request a large print questionnaire if they had sight difficulties. The prize draw was administered one month after the questionnaire had been mailed, and when it became apparent that there were unlikely to be any more responses. Each of the responses was numbered and an online number randomisation tool, www.random.org, was used to select the

winners. If a number was picked and that person had not selected to be entered into the prize draw the process was repeated until someone that did want to be entered was selected. This was repeated for the second and third prizes. The vouchers were purchased and sent to the winners on the 16th November 2009. An example of the letter sent to the winners can be viewed in Appendix 7.

5.6 Analytical approach

The data were analysed using descriptive and bivariate analysis of non-parametric data. Multivariate analysis was not employed for a number of reasons. Firstly, the large number of variables represented diverse concepts, which had not been considered in combination in previous research. This required a detailed and extensive focus on how the variables related to the sample and to each other, which favoured descriptive and correlational analysis. Some researchers have noted the importance of this type of analysis, and have highlighted how it can be unduly given less attention in favour of more complex analysis (Besag and McNeil, 1976 in Robinson, 1998).

A further reason was the relatively low valid sample size obtained ($n=110$) which would weaken the validity of multivariate tests. Budaev suggests that small sample size should be considered a principal reason to avoid use of multivariate approaches, such as factor analysis and principal component analysis (Budaev, 2010), with factor analysis deemed to require extremely large sample sizes (Fabrigar et al. 1999). As well as absolute sample size, the sample size relative to the number of variables is deemed as important when considering use of multivariate statistics. Estimates of preferable ratios between subjects and variables for multivariate analysis exist, from 5:1 (Gorsuch 1983) and 3:1 (Gorsuch 1997) to 10:1 at the upper end (Nunnally 1978). In this case, the large range of variables considered in combination, along with the relatively small sample, meant that the use of multivariate methods was considered inappropriate.

Despite a more general interpretation of Likert scales as categorical data, which therefore should be analysed using non-parametric tests (Gob et al., 2007), the

use of parametric tests on Likert scales is an approach frequently employed (see Barr, 2001 for an overview of research taking this approach). In reality the statistical approach taken is subject to interpretation because: “the promotion of ways to analyze data measured in Likert scales is not widely available within textbooks. In fact, there is no common standard accepted by the scientific community for the correct interpretation and analysis of such data” (Gob et al., 2007:602).

In this case, the decision to use of non-parametric tests was due to the small sample, the diverse concepts analysed and the frequent use of items, rather than scales. These factors meant the use of non-parametric data would enhance the confidence in the results. Kendall's Tau, a correlation coefficient for non-parametric data, was chosen specifically due its appropriateness for the data. Field outlines that Kendall's Tau “should be used rather than Spearman's coefficient when you have a small data set with a large number of tied ranks” (Field, 2009:181). As frequent tied ranks is a common phenomenon when using Likert-type items, particularly narrower scales such as 5-point used here, and because the sample size was relatively small, Kendall's Tau was most appropriate. Additionally, evidence suggests, that in general, Kendall's Tau provides a better estimate of correlations (Howell, 1997; Clark-Carter, 1997). Therefore, by using Kendall's Tau rather than the more popular Spearman's rho, it is possible to “draw out more accurate generalisations” (Field, 2009:181). Due to the very small sample size of GAP participants (n=9), the GAP data were analysed for variations to the general sample using bivariate analysis of independent samples (Mann Whitney U-tests) which are appropriate for very small samples. Univariate descriptive analysis was also performed.

5.7 Conclusions of the chapter

This chapter has outlined the methodological and analytical approaches taken for the research. It has outlined Pragmatism and why it is the theoretical lens being utilised. Within this framework, the reasons for utilising a research design that includes both a qualitative and a quantitative stage have been outlined. The

qualitative stage has been included primarily to help arrive at the most appropriate items to test drivers and constraints of ESC for HIH (Objective Two). The quantitative stage is the primary focus of the research and will achieve Objective One and Two, and is also the basis for achieving Objective Three. The overall research design, as well as the detailed sampling and implementation considerations for both the qualitative and quantitative phases, have been presented in this Chapter. The next chapters will present the results of the research, with the qualitative results presented in Chapter Six and the quantitative results presented in Chapter Seven.

CHAPTER SIX

Qualitative results

6 QUALITATIVE RESULTS

6.1 Introduction to the chapter

This chapter will outline the results of the qualitative data gathering stage. As discussed in Chapter Five, these data were collected primarily for arriving at the driver and constraint items required for the quantitative stage, in order to achieve Objective Two, and this chapter will focus on those results. The secondary goal of the qualitative stage was to gather additional insights that may be useful to an understanding of relevant psychological orientations (Objective One) or other factors that may influence ESC by HIH. Due to constraints of how much data can be presented in this document, these results are presented in Appendix 2, but will be summarised in this chapter. Chapter Five presented the analytical approach taken, which was a thematic content analysis involving both inductive and deductive aspects.

The chapter will firstly consider the data results for each of the ESC behaviours, starting with holidays and moving to cars and then products. For holidays and cars the data will be presented in the categories of experiential, functional and relational needs which were found to be relevant macro categorisations from the data analysis. This was not the case for the product category. Following the behavioural categories, constraints to increased ESC consumption, which cut across behavioural categories will be presented. The chapter will then present a summary of other themes regarding the ESC of HIH gained through the qualitative data analysis. The participant comments are coded, with details of the participants in Table 6.1

Table 6.1 Participant reference table

Code	Interview type	Number of adults in household	Number of children in household	Gender and age of participant's
a, b	Couple	4	2	Female (36) Male (39)
c, d	Couple	2	0	Female (61) Male (37)
e	Individual	2	0	Male (54)
f	Individual	4	2	Female (42)
g	Individual	2	0	Female (49)
h	Individual	1	0	Male (41)
i	Individual	3	1	Female (53)

6.2 Drivers of environmentally-significant consumption

It was notable that all the interviewees were engaged in ESC. All participants, except one who did not have a passport, regularly flew to short and long haul holiday destinations. All of them had large cars, including sports cars and 4 x 4s, and two interviews revealed households where there were more cars than householders - due to classic cars being a hobby. The product consumption varied from active dislike of fashion to frequent redecoration of the house to keep up with trends. All but two of the themes identified in the literature review were evidenced by the research.

6.2.1 Holidays

6.2.1.1 Experiential drivers

As indicated in Chapter Three, the experiential drivers of holiday-taking are varied and often strongly related to holiday-taking. Many studies have found that the need for stimulation is an important motive for taking a holiday (Wahlers and Etzel, 1985; Fodness, 1994; Gibson et al., 2002; Kozak, 2002), and the study indicated that there was much evidence to support this. Chapter Three outlined evidence that the search for stimulating experiences goes beyond the motivation to escape from routine, but rather relates to the drive towards something interesting and exciting. Krippendorff refers to “broadening the mind” and this is supported by comments from the respondents such as:

“..I think it’s because we want to go and visit other places and experience new things” (i)

and:

“...there is a big wide world out there and there’s loads to see”. (h)

Crompton refers to enhancing education as providing one basis of stimulating experiences (1979). This was supported by respondents who indicated that finding out about other people’s lifestyles (Uysal and Hagan, 1993) provided stimulation and expanded their knowledge of the world in an experiential way:

“We like looking at other cultures and stuff as well. When we get there we really get involved”. (b)

“we went on a day trip to Havana which we found absolutely fascinating” (a)

“I like to go into supermarkets - into the fish markets and explore”. (c)

“I think its just that you get, you do get a different sort of lifestyle” (i)

As Chapter Three indicated, this experiential stimulation has been connected with higher-income groups (Bohler et al., 2006; Henley Centre in Pizam & Mansfeld, 1999) and additionally these factors appear to be connected with a propensity to take longer distance holidays (Bohler et al, 2006). A number of comments from different HH participants appeared to support this, particularly indicating a connection between experiential stimulation and far-off destinations:

“I’d like to see how certain cultures – how they actually survive. I’d probably like to see- to explore a little bit more of Africa for instance”. (c)

“There are so many places I want to go – I want to go to New Zealand and Australia and to do... sort of... South America and then - there’s a lot I want to do still”. (g)

As well as the drive for stimulation, the drive to avoid ‘un-stimulating’ experiences was also expressed by one participant:

“I would hate to go on a holiday like that.... everything laid on, you stay in one complex, you don’t really get to see the country. That would be my worst nightmare I think”. (h)

The Travel Career Ladder is a contested concept which suggests that previous experience of travelling in turn influences future travel choices (Pearce, 1988, 1996; Ryan, 1998). There was some evidence in the literature that this may be connected to the drive for stimulation, a need which prompts the seeking out of the ‘yet to be experienced’. As one interviewee made clear:

“somewhere totally different where most people don’t go”. (c)

As suggested by Reimer (1990), push and pull factors of destination choice are mediated by culturally formed dreams and fantasies people buy-in to. This was expressed by one participant who noted:

“It’s nice to go on the holiday because of going to Africa and going on Safari and seeing loads of things I have always wanted to see since I was a kid”.
(h)

Anticipation was also recognised by one participant as an important aspect of their holiday-taking:

“If you’ve got a big holiday coming up you sort of focus everything on that... its just psychological I think, it makes a bigger holiday, it makes you feel you have got to prepare for it”. (i)

Importantly, the interviewee particularly related these bigger longer holidays with those in long-distance locations.

Max-Neef (1991) stated that there is a human need for creation i.e. imagination and inventiveness and idleness in terms of daydreaming and fantasising. This could be seen as connected to anticipation, as supported by one respondent:

“Because I get the time off work it was nice to plan something and have something to look forward to”. (a)

As indicated by the literature in Chapter Three, the drive to experience being in a different physical environment, which is a widely recognised motivation for holiday-taking, (Krippendorf, 1999), was indicated in two key ways. Firstly, the drive to be in beautiful surroundings, which one participant expressed as:

“I want to go somewhere where it is scenic and quiet really and I can appreciate the landscape”. (g)

Another talked of lack of human interference being connected to this scenic beauty, something widely evidenced (Orians, 1980; Wilson 1984; Tesitel et al. 2003). Max-Neef (1991) and Tapachai and Waryszak (2000), particularly identified

aesthetically pleasing surroundings and landscapes with successful satisfaction of relaxation needs. Only one participant directly referenced this:

“places like that are unspoilt...(they) look really appealing and beautiful”. (a)

Promisingly, long haul holidays are not always associated with beautiful holiday destinations, as one respondent commented:

“there are some very beautiful places in England I want to see”, (g)

The second way physical scenery was seen as important was in terms of the type of weather experienced. Sunny, warm climates were indicated as important for two respondents:

“we quite like the sun the sea and the sand” (i)

“Europe’s pretty big and its pretty warm when you get to the South.” (h)

6.2.1.2 Functional drivers

Escaping monotony was shown by the literature review to be one of the more important functional reasons for taking a holiday (Krippendorf, 1987; Fodness, 1994). Respondents highlighted that holidays provided an escape from normality:

“It’s nice to get away and have a change of scenery”. (d)

For one participant it was his wife’s mundane routine which provided the driver:

“My wife likes it (to go on holiday) as it gives her a bit more of a break.

Because she does more of the chores so she needs more of a break from it”. (e)

For some such as Crompton (1979), the escape from the mundane is not necessarily connected to a particular destination, as long as the goal of change is achieved. This view is supported by one respondent who defined a holiday as:

“when you get away from the sort of.... routine.... and you do something different”. (i)

Another also made this function of holidays clear:

“very important... for getting away from what we normally do” (c)

Relieving pressure appeared to be important to several respondents. One felt:

“I think that it was the switching off from work (that made the holiday enjoyable) (e)

Max-Neef (1991:32) in his categorisation of needs pointed to the need to keep oneself in a fit state to work, ensuring subsistence and protection. Krippendorf (1987) relates this need to ‘recuperation and rejuvenation’. This is borne out by the respondent who felt that:

“its important, as I say, we can both switch off. We’ve both got demanding jobs and as I say you just – as soon – a really strange thing is that as soon as you step onto the islands it seems you just forgot about everything else”. (g)

For this respondent, a UK holiday provided the necessary escape. Crompton (1979) describes the need to escape pressure as different from the need to escape the mundane. He also highlights the role of changing dominant social contexts. The need to escape to a totally different environment was the motivation of the same respondent who commented that:

“One thing I like about Scotland is that there are very few people there - you can take a cottage in the middle of nowhere and you can just shut yourself off from everybody”. (g)

Relaxation was shown by the literature review to be an important holiday-taking motivation (Crompton, 1979; Krippendorf, 1987), something that was reflected by the comments of several respondents. One respondent noted the centrality of relaxing to a recent holiday:

“just do nothing – chill out, relax. We didn’t have to do anything for a week – that’s why Cuba was special for me anyway”. (a)

Another felt their holiday was a:

“chance for us to relax” (b)

The length of holiday was related to the degree of relaxation by one respondent who commented that

“a longer holiday you wind down more”. (i)

While for some relaxation, reducing everyday pressure and relieving monotony, were important functional drivers, for others, pursuit of a hobby could be identified as an important factor in their holiday-taking. For one respondent this provided the means to assist relaxation and escape, supporting Crompton’s (1979) assertion that pursuing hobbies is associated with the need for relaxation:

“we find dancing relaxing so for us it would have been a relaxing holiday even though we had lots of workshops and it was quite tiring – the tiredness was more of a pleasure than exhaustion”. (c)

For one respondent their hobby was a central aspect of their holiday and dictated when their holiday was taken:

“we started bird watching and things like that and we wanted to go away out of the normal holiday season”.(e)

6.2.1.3 Relational drivers

Spending time with family and friends is one of the key holiday motivations evidenced in the literature (Dann, 1977; Crompton, 1979; Krippendorf, 1987; Mannel and Iso-Ahola, 1987; Fodness, 1994). This was supported by a number of respondents who mentioned friends and family as a motivation. For one respondent the pressures of work enhanced the role of holidays in providing a space for family time:

“I think it’s very important because I work full time and my husband works - it means we don’t get as much time to spend together and so having the holiday is a good time to just do things together as a family”. (i)

Friends came up as a distinct theme, with a number of respondent’s mentioning their role in their holidays:

“We chose it because it was a lovely house – lots of room- so we invited our friends down”. (f)

“...I’ve got friends in Mexico so I go and see my friends in Mexico and they’re great”. (h)

For one respondent, the drive to spend time with friends meant the decision to go to a long-distance location was taken for them, where, by preference, they would have chosen a UK destination:

“We holiday with friends sometimes and they’ll say oh we are going to Thailand or something do you fancy coming with us”. (g)

As well as interaction with those already known, spending time and getting to know new people was also mentioned:

“I love meeting the locals and being part of them”. (c)

Although the above respondent was motivated by meeting people different from themselves, there was more evidence from respondents that spending time with new people who shared a similar identity group was more important, supporting Sirgy and Su’s (2000) assertion that self-congruency with a tourism destination affects consumption:

“we went to Spain for a long weekend right and it was possibly the worst holiday we have ever been on... we were just snobs... yeh we were a bit snobby weren’t we.... because it was Brits abroad”. (c)

The literature indicated that identity is an important factor in holiday planning, with Shaw and Williams noting “socially constructed boundaries to individual choice based on social positions, expectations and socialisation” (1994). Certainly, the experience of one respondent would seem to support this:

“If I went on a package holiday it would be a package holiday that would be to somewhere I wanted to go and then probably there would be like minded people” (f)

Another respondent felt:

“I don’t think you’d find your, my, sort of person (*on a package holiday*)” (h)

6.2.2 Cars

All the participants owned large-engine cars, some of them owned several and therefore the majority of the evidence gathered is specifically in relation to environmentally-significant cars. Examples of cars owned are: four-wheeled drives; Mercedes E type; Audi TTs and Jaguar. Cars owned previously by interviewees also tended to be large-engine cars.

6.2.2.1 Experiential drivers

Experiential factors appeared to be quite important to people's choice of car. There is an indication of a connection between quality, fun, excitement, brand loyalty and the large-engine cars people bought.

It was found by Choo and Mokhtarian (2004) and by Bryant and Forsyth (2005) that luxury cars and powerful, sports cars are connected with notions of fun and excitement. Both fun and excitement were two areas that emerged from the data that illustrated the joy that people experience when driving:

“(I would drive) any car that is really good fun” (h)

“I wouldn't mind trying out different cars (to own) – just for the fun of driving one.” (d)

Gilroy (2001) and Shelley (2003) have noted that the speed of the car has long been symbolically associated with positive emotions such as fun, freedom and personal power, and this was evidenced by the respondent who said:

“I had a TVR actually before as well... which was great – great fun.” (A TVR being a high-powered brand of car) (h)

The interest in owning a high-performance car also emerged from the data. With one respondent noting that the reason they bought the particular car was:

“it's quite a sporty car” (g)

Another respondent commented:

“Road holding and performance and all those little things that it was nice to have in a car.” (h)

For the latter participant, although more functional aspects may take precedence, the speed of a car was still a driver of car choice:

“The thing with a car is reliability and maybe speed a little bit.”(h)

Several respondents spoke of the feelings of security that the experience of driving a large-engine car evoked. The desire for control was expressed by two respondents:

“It’s a big car and it holds the road really, really well,” and , “as long as you’re not going 40mph and can’t go any faster,” (g)

“Relative performance (is important) – so that it isn’t sluggish up the hills and you can just progress at a reasonable pace,” (e)

For others, how well built the car felt evoked feelings of security, with how doors and other features felt when they closed them, something two participants commented on:

“I’d like to have something a bit you know – the Audi – when I close the door it feels heavier,” (a)

“there’s no particular necessity to have a Mercedes but I do appreciate quality in the stuff that I use and that I wear and that I drive so the Mercedes is nicely built, it has a sort of clunky quality and things shut properly.” (d)

Ewing (2000), found that the tendency for people to intend to buy a brand that they already have is high and this was echoed by three different respondents who were attached to brands they were familiar with:

“I don’t think I’d necessarily choose anything different – just a newer version of what I have got.” (g)

“...you revert back to something that you know,” (e)

“a Volvo again.... C70 convertible...because I quite like it.” (g)

An interest in owning and collecting 'classic cars' was commented on by at least four respondents, reflected in comments such as:

"I would prefer to have just one (car). We have two in the house and that's partly because it's my husband's hobby...he's car mad you know," (f)

"It's a beautiful little car – it's a classic car and I've had a passion for it for a long time" (c)

"I've always been quite partial to classic cars." (d)

It was observed in the literature (Tam-Scott,2009) that an interest in cars as a hobby is more likely to be more prevalent in higher income groups, due to the expense of owning, insuring and keeping up such cars. This was the case for those respondents who had a hobby interest in cars, whose hobby cars were all of large-engine size, even relative to their age and efficiency. One respondent captures this as:

"I've got a v12 XJS Jaguar which I have had for fifteen or seventeen years or something. Sort of half as an investment and half it's just something that is very nice to have – unusual – I like driving – I like cars generally. And I've got another BMW... they are not true classic but they are collector's items to a degree". (e)

6.2.2.2 Functional drivers

There were many functional drivers for choosing the cars the participants owned. In the context of increasing costs of running a car several respondents felt that economy was an important driver in choosing a car. This translated into the need for fuel efficiency, for example:

"we have a diesel for economy really and to save – because the diesel engine will have a higher mileage," (g)

"it does about 36mpg at the moment which is good." (h)

However, the relative nature of this economy was apparent. The diesel car driven in this case is a Volvo S60, which attains about 30 miles per gallon. This, and the 36mpg car judged to be 'good', is in the context of EU legislation which states that

all new cars from 2012 should have a fuel economy of 56-63 mpg. This strongly suggests that economy is not a primary driver of car choice for these respondents. Some respondents also felt it more economical to buy a car that would last:

“we were meant to be doing that with the Freelander” (*running it until it needs to be scrapped*) (i)

“we don’t have pre-set ideas on changing cars... we have to have reason for changing the car – the car is say irreparable or an accident or something like that and it becomes necessary to change it then we will....”(d)

Reflecting Jensen (1999) and Hiscock et al. (2002), comfort was another functional driver that was important to respondents, as two participants put it:

“I like the comfort from it,” (g)

“...and I appreciate a bit of comfort now in my old days.”(d)

That comfort was related to long journeys was noted by two individuals who said:

“it’s for long journeys, even I’ve noticed that ...its really comfortable,” (i)

“The comfort matters because if you’ve got something that’s uncomfortable to do long-distances in, that’s annoying.” (e)

Larger, more expensive cars, often have a range of features provided as standard. Several respondents mentioned these as an important aspect of their choice when buying a car supporting findings by Hiscock (2002). For example:

“It’s got air conditioning.” (i)

“It has every mod con in it.” (g)

Sufficient space appeared to be an important functional consideration for one respondent who gave this as their principle reason for choosing their car:

“But the main reason for choosing that particular car (*Mercedes estate*) was the space that was needed in the car.” (d)

Jensen (1999) noted that space was known to be an important consideration for car buyers for transporting, goods, people or animals. This was supported by three

respondents who mentioned all these factors in different ways as a reason for buying their high-energy car:

“.. we never would have bought a 4 x 4 if we didn’t have, you know, a daughter who has friends that we need to cart around and we have a dog,”

(g)

“he’s got to have a big car for work because he is going to the cash and carry and the rest of it and its not always practical when you’ve only got two seats in your car to go and pick people up and go places,” (a)

“one is a Ford pick up truck and that is because we have a large garden with lots of stuff to move about which is very useful- very practical.”(e)

As Giddens (1991) has suggested, the need for protection is a significant driver of consumption. Comments by the respondents indicate that the requirement to purchase a car that makes them feel protected, manifests itself in various ways. The first of these is believing that the car will protect them from accidents, which Hiscock et al. (2002) and Schultz (2006) noted as being important in car buying:

“I do just like the car – and its very safe.” (h)

“like the fact that it feels very safe.... it’s a big car and it holds the road really really well – it’s quite powerful...to suddenly get – I would feel quite vulnerable I think in a smaller car like the Nissan Micra.” (g)

The last comment mirrors Schultz’s (2006:66) finding where a woman was quoted as saying that she “no longer feared for her life the way she did when she was driving ‘small cars’.”

Reliability was a second important protection factor in car selection, for example,

“I think it’s more important that it’s reliable.” (a)

“the reliability as well (*a main reason for buying the large estate*).” (c)

One respondent clearly felt that their specific circumstances dictated that reliability was a key factor. Reflecting the findings of Shultz (2003) this reliability was connected to a car which could deal with different terrains and natural events.

“I was interested in looking at a four wheel drive.... we do live out in the country – we’ve got stuck in the snow on several occasions, not that we get it very often, but it is annoying when you do.” (e)

Jensen (1999) reported that environmental impacts of car ownership have become more relevant in recent decades and that, in the light of this research, attention has been attracted to forms of car use and ownership.

The environmental reasons for purchasing a particular high-energy car were apparent for three respondents, although in a ‘weak’ way, where economy and environmental concerns were conflated:

“I don’t know whether to go for something that’s more economical and environmentally friendly“ (g)

“we had a big four by four and massive bug 4 litre petrol guzzler and I was starting to feel guilty driving that around...wrecking the environment and stuff like that and costing me a fortune at the petrol station five times a week. It was getting so expensive to run...(so we go rid of it)” (b)

Although respondents certainly seem aware of their vehicle’s potential damage to the environment, this seemed to provide supporting arguments for purchasing a large-engine car as was demonstrated by comments such as

“it’s a diesel and so we felt that it was a bit more friendly in terms of the environment (*a VW Toureg 4X4*),“ (i)

“(we wanted a car that) would work well with biofuel (*Mercedes E Class estate*)” (d)

6.2.2.3 Relational drivers

Reflecting the literature review in Chapter Three, identity and status were the two key themes that emerged from the qualitative data. Birdwell (1968:82) argued that: “an automobile owner's perception of his car is essentially congruent with his perception of himself.”, and it was clear that several respondents perceived that there was a relationship between their self-identity and their car. One respondent said:

“everyone sees my Porsche and they immediately say ‘it’s you’.” (c)

Another respondent explained her partner’s choice of car as:

“it was about what he’d look good in” (a)

Two respondents reported a view of cars that were closely related to specific periods of their lives that were not now congruent with their present identity, for example:

“I’ve moved on from the Nissan Micra days.” (g)

“(she) wouldn’t go back to having a Fiesta.” (b)

Given the strong connection in the literature between identity and car ownership (Levy 1986; Katz, 2000; Sheller 2003; Thrift 2003), it was not surprising that as respondents often identified with their cars and that they often chose cars because they felt they looked good:

“I do like Porsche’s... they are really, really pretty cars” (a)

“... I’ve always wanted one, I like the look of it – I think it’s a gorgeous looking car,” (h)

“I’ve always had a passion for this little car. It’s a beautiful little car... it’s a classic car and I’ve had a passion for it for a long time.” (c)

One participant was clearly torn between their car’s appearance and the functional requirement for practicality:

“You can’t get the baby seat in the back (of the Audi TT)... but (it’s a compromise because) it looks a lovely car - its beautiful engineering and all that” (f)

The literature found that much of the connection between self and cars is couched in a discourse of gender (Sheller 2003; Gartman,2004). Branding of the Sports Utility Vehicles (SUV) has been overtly masculine and connected to power and affluence, which is reflected in the comments:

“P actually likes 4 X 4’s... it’s a macho thing.” (i)

“(he) said that no they were all hairdresser cars and they were all girly and that the Audi was a bit more manly and a bit more meaty.” (b)

The link between cars and status is well documented (Sheller, 2003).

For one respondent this was about differentiation from the norm:

“(If I could get any car I would get) a Hummer for work. What a great statement – brilliant... it’s just awesome – everyone would recognise you straight away.” (b)

Gartman (2004) suggested expensive cars are particularly connected to identities of power and wealth. This was supported by respondents who keenly felt that choice of car was closely linked to social status:

“my choice of car has always reflected my income.. ” (g)

“I think cars are definitely are a status symbol.” (g)

This relative status could also be actualised by purchasing a car of relatively high power and performance, with one participant saying an important factor in car choice was:

“Relative performance... slightly larger capacity than average.” (e)

Whereas social status was one area of concern, the data indicated that professional status could provide a distinct reason for purchasing a large-engine car:

“if I turned up in a banger – a rust bucket you know- I wouldn’t have got contracts. It doesn’t look like the business is doing well.... whereas if I was a rep going out selling to customers and I turned up in a flash car then that doesn’t work because customers think that’s where a lot of the money is going- its going on a posh car. So you have to be careful depending on what industry you are in really.” (b)

The connection between wealth and expensive cars, and therefore often more powerful cars, was also made clear by some participants. One commented that:

“subconsciously if its an expensive car then I would probably make a mental note, subconsciously oh they must be well off,” (d)

While another said, as previously quoted said:

“My choice of car has always reflected my income...” (g)

For the latter participant the matching of car with income meant an increase in the price as well as the power of the car they bought.

6.2.3 Products

This section presents the results of the qualitative data analysis in terms of what was indicated about the drivers for new product consumption by the HH interviewed. Consumerist themes of a desire for newness and the concern for matching were both themes the data revealed. In respect to the former, there was evidence that participant's identity and cultural context played a role in the extent to which they valued newness. Finally, there was evidence that second-hand products were not something connected to the consumption practices or identities of the participants.

6.2.3.1 Newness

As outlined in Chapter Three, the desire for 'newness' is a core feature of social-psychological analyses of consumerism and consumer cultures: "based largely on goals of novelty for its own sake, pure individuality, and the passion to possess people and things briefly" (Csikszentmihalyi and Rochberg-Halton, 1981:240). Evidence from respondents indicated a desire for products to be continually updated without a functional purpose for this, for example:

"we've got several TV's in the house and they've all been changed now (to) flat screen." (g)

"yeh, I do like to buy new clothes" (i)

"About every 2 months I suppose I have a real sort out... mainly because I don't like the things. I throw them out so I don't have to look at them." (g)

Trentmann (2004:10) describes a "one dimensional man' consumed by a compulsive desire to purchase goods". However, Shove and Warde (1998:6) explain that new products are a way of "averting boredom" or providing excitement. For one participant, although an almost pathological approach to replacement of

products was apparent, this was rationalised as an issue of indecisiveness and adherence to a perceived standard of 'taste':

"I'm redecorating all the time... because tastes change - colours, carpets, wooden floors, back to carpets, wooden floors...I do change my mind an awful lot with the home. I spend a lot more money on the home than I do myself." (g)

Rather than an internally derived psychological compulsion, this particular case would appear to be more aligned to descriptions of the pursuit of psychological security in culturally derived fashions and tastes, which shift continuously without grounding, something well documented in post-modernist literature (Baudrillard, 1998; Lash, 1990).

Comments reflecting a drive to keep up with trends and fashions were more evident in the younger participants, and the desire for replacement of the old with the new on a continual basis was not evident for all participants. One older participant for example indicated pride in time take to replace a dining table:

"we just bought a new dining table and it's the first new dining table we've had since we were married and that's 30 years". (e)

The role that income has in enabling the pursuit of newness was also evident. One respondent replied, when asked what the likely the result of a higher income might be:

"It would probably just make me change things. I suppose, yeh, I would just think, right, I want to get rid of everything I've got in the house now...start again" (g)

Additionally:

"I've had three sofas in five years." (g)

A question that arises is the extent to which income merely enables such consumption obsolescence, or in fact drives it through cultural consumptive norms, which filter down to the level of self-perception. Droge et al.(1993) consider

continual obsolescence and introduction of the new as one of the three pillars without which a consumer culture could not exist. In this respect there was an indication from more than one participant that mobile phones were a key consumer items that encapsulate the role of newness in consumer cultures. This, and the key role advertising plays in culturally transmitting the role of newness, is summed up by one participant who noted they would:

“Probably (replace) a mobile phone more than anything... cause we don’t want to be left with a ‘mobily’ on the table... have you not seen the adverts?... a mobily is the ugly old phone – its got a little character and he hates coming out because the new phone is out.” (b)

Another held a self-identity that encompassed being fashionable:

“I think it’s quite important to keep up with trends really... I try and keep up with the trends.” (i)

Again, not all respondents held a self-identity that was based on being fashionable. One respondent specifically noted their lack of conformity to trends:

“No I don’t try to (*keep up with fashions*). I think - I’m always the last person to buy something probably” (h)

Although the qualitative data suggested older participants were less inclined to buy new products for non-functional reasons, one respondent indicated the intergenerational influences on attitudes to newness:

“I’ve just had a new mobile phone now... my daughter persuaded me to change it because she said my old one was too awful... I’d had that one for three years.” (g)

6.2.3.2 Matching

Shove and Warde, 1998, highlighted the role of the ‘Diderot effect’, where the inclination to purchase products that match, as one key driver for new product consumption. This means that “not only should the dressing gown match the armchair, but it should also be symbolically consistent with automobile, vacation and concert-going” (Shove and Warde, 1998:7).

The desire for a consistent relationship between possessions is illustrated by the comment justifying the purchase of new sofas:

“we wouldn’t think about replacing them, it’s just at the moment they don’t really go with our new house.” (i)

The same participant noted:

“I don’t buy things that won’t blend with other bits.” (i)

McCracken, in 1998, describes the need to match products as having a ‘ratchet’ effect on consumer expenditure. Additionally, as one participant has noted, the subjective nature of what ‘matches’ could be seen as based on the dictates of particular lifestyles (Chaney, 1996), which in turn are shaped by income and cultural status:

“If you’ve got a bit of money and you’re a professional or whatever... you’re seen as a consumer and that’s the tag that comes with you and you know – you’re expected to have the right shoes and the right watch and drive the right car.” (a)

6.2.3.3 Used goods

Shove and Warde (1998) describe how older items can be specifically valued because of their age. McCracken (1988) refers to the fact that people would value products with obvious signs of use from revered others. In this study however no evidence was found of a positive relationship with older products, particularly clothes.

It was evident in all comments that no participant bought second-hand products regularly. For one, it appeared that buying second-hand products was something mis-aligned to their sense of identity:

“it’s just something I don’t do” (g)

When asked about whether they buy second-hand clothes, one respondent said:

“No!” (laughs) (g)

Another participant explained the reason for their aversion to second-hand clothes was related to their inferior qualities:

“No- they smell”... because it’s exactly what they are – second-hand”. (a)

There appeared to be a social identity embarrassment to visiting second-hand shops;

“Only if I am dragged in by somebody else.” (g)

This embarrassment also extended to the utilisation of second-hand clothes, as one participant expressed:

“Yeh, (I would feel awkward telling people I had second-hand clothes on)... but I wouldn’t wear them. It reminds me back from my childhood where you get hand me downs from your older brother when it was 4 years out of any sort of fashion at all... nah I couldn’t do it.” (i)

6.3 Constraints to increased consumption

The analysis revealed a number of constraints that were applicable across ESC categories. Many of these reflected the common themes identified in the literature review.

6.3.1 Time and money

Time and money were the most remarked constraints to consumption by participants, particularly for holidays. The connection between higher income and higher working hours meant that for some, income was not the main constraint, but rather time:

“...for me one of the constraints is really taking time off, because, I’ve got job where it’s very demanding and quite difficult to take a holiday.” (i)

Another noted:

“It’s not the money...it’s trying to get the time. If we had the time... we’d book something. Everytime.” (b)

This was echoed by a further participant who felt:

“I don’t think we could take more than a couple (of holidays per year if income trebled) in terms of, you know, finding the time really with work.” (i)

Time was also considered to be constraint for their car consumption, by one participant who wanted:

“an older Triumph TR6 or something like that – something British, (*but*) that’s the thing I’d never have time (*to drive and repair it*) – at the moment in life – because I’ve got so many other things – so I would have to give something up- I’d hate giving up bees or something.” (e)

The literature suggested that shopping could be considered a time intensive pursuit (Ackerman,1989). This was echoed by the respondent who said:

“I used to buy lots of stuff in Oxfam shops but I don’t do that so much now... I just haven’t got the time,” “You need an awful lot of time to find something that’s effective and looks right (in a charity shop) and I don’t have the time.” (i)

For one respondent, long-distance holidays were particularly constrained by both time and money:

“..we don’t have the money or the time and you would have to go for at least 2 weeks I would think...it’s a little difficult to take 2 weeks out in one stretch at the moment.” (d)

Money was also a consideration in constraining the amount of holidays taken by other respondents:

“We would take more weekend break holidays... to Europe (if income trebled),” (i)

“We could be having more exotic holidays – (but) we took the decision that we didn’t want to sell the (other) house.” (l)

6.3.2 Values

Several respondents clearly felt that their personal values provided a constraining force on their consumption. Although not explicit about what values were constraining consumption, it appeared that sentiments of anti-materialism were a factor. One, in relation to new products, expressed this as:

“My values are very much against that kind of conspicuous consumption really.” (i)

Cars were shown to be the consumption category where issues of environmental values were apparent. There was evidence of participants’ awareness of a growing sense of social disapproval about large cars due to their high-energy consumption. However, they were not explicit about whether this was in relation to climate change or more localised issues of pollution. For one participant driving a large car represented an internal sense of value conflict.

“I think my thoughts of cars are changing. Obviously because of the cost of running one at the moment and economy and what its doing to the environment and everything else while I am driving a huge great car.” (g)

For another a growing sense that consumption, that was not seen as an issue for them previously, was becoming a source of guilt.

“We had a big 4 x 4 and a massive big 4 litre petrol guzzler and I was starting to feel guilty” (b)

Another comment about cars, reflecting frugal sentiments that were also apparent in relation to general product buying, indicated concern about spending money on expensive cars.

“Porsches are really, really, pretty cars, but...you couldn’t justify spending that much money on a car.” (a)

6.3.3 Subjective norms

Both the data and the literature indicate that consumption is restrained by the values and judgements of significant others. Subjective norms are known to affect behaviour and are defined as “one’s understanding of what salient other people expect one to do (in regards to a particular action) and one’s willingness to accept these expectations” (Olsen, 1981:119). For the participants there was a notable sense of social disapproval for driving large cars particularly. For one respondent,

the response to a large-engine car her husband was given as a gift was exerted in a friendly way by neighbours, but had a notable effect on the participant:

“Those who we cared about on the street... they kind of teased us remorselessly (for owning an Audi TT)... kind of jokey laughing in terms of, you know, having a swanky car and...it’s a sports car and of course we are a family of four and can’t all get in the car and its, you know – living the dream.” (f)

For this participant, this comment fed in to a general feeling that their affluence made them different from others on their street:

“But I am kind of aware for example we live in a you know quite a modest terraced house and one of the cars we have we were actually given as a present and I was quite anxious in terms of you know the perception of that car on basically you know we’re not quite a two up two down but you know it’s – but it’s sort of an ordinary terraced house and yeh so I am kind of aware of you know perceptions of that.” (f)

For another respondent it was the effect of a general sense of social disapproval, rather than from friends or family, that was keenly felt:

“I did start to notice people looking at me type of thing – and we didn’t like it (driving a gas guzzler),” and “I think everybody is getting into this mindset now where we don’t want to be driving around in huge great cars.” (i)

They further noted:

“Well I do (think the 4 x 4 is frowned on) because I think when you are driving along in them people look at you sometimes.” (i)

6.3.4 Identity

Several responses indicated that conspicuous consumption did not fit with their perceived personal identity, for example one participant expressed this in a number of ways throughout the interview:

“I am always the last person to buy something probably. Like I wouldn’t know how to use one of those – I don’t have a PDA...” (h)

I don't think I'm too trendy with clothes. I just like to wear something that's smart – smart and that's it. (h)

"My priorities have not been fashions or trends or mobile phones" (h)

Another noted:

"I'm not that sort of person (trendy) and I never have been even as a youngster..." (c)

One respondent obviously felt the shared identity of the family was important and provided a constraining force in their consumption decisions:

(I didn't want him to get a Porsche because)... "I think the Porsche sends lots of kinds of signals and I think it gives people lots of messages and I don't think that was- in terms of where we are at." (f)

6.3.5 Stage of life

As outlined in Chapter Three, life stage has been identified as an important shaper of consumption behaviour (Wells and Grubar, 1966), and various responses indicated that stage of life was a constraining factor. This influence of life stage has been specifically noted in relation to tourism demand (Lawson, 1999), and this was supported by the data, particularly in terms of the effect of small children on travel patterns, for example:

"We've got a little baby aged 14 months and so that just about restricts our... he's quite young and he's not a good traveller so we have decided on a two hour circumference of where we live now." (f)

The same participant also noted:

"When you have children under five it really focuses – you have to be quite clear in terms of your holiday requirements you know – maximise it. Before that I think we did other things. And we will do that again soon, but at the moment...." (f)

Stage of life has been shown to influence cars consumption (Wells and Gruber, 1966) and this was illustrated by the data in relation to a classic car by the respondent who said:

“an older Triumph TR6 or something like that – something British (would be car of dreams) that’s the thing I’d never have time (to drive and repair it) – at the moment in life.” (h)

6.3.6 Impracticality

Practicality is linked to stage of life, as illustrated by the previous comment, where the participant’s stage of life meant they did not have time to own a classic car. However there were other data that indicated that impracticality, for a variety of contextual reasons, meant that however desirable, certain consumption was not possible.

For example, one participant noted a range of practicalities constraining longer distance holidays:

“Partly because we have a large garden and we have pets – being away is slightly inconvenient...I keep bees which keep me at home in the summer – and we’ve got cats and we live out in farmland so it’s not very easy to get people to come and look after them.” (e)

Another respondent would not buy their ideal car because it was impractical,

“I’d choose some sports car of some sort – but I would never buy one in the real world because its impractical from the perspective of getting things in it.” (h)

6.3.7 Lack of enjoyment

One further theme emerged from the data. This could be likened to the recognition that certain consumption acts as a pseudo-need satisfier (Max-Neef,1991), whereby they may “annul, in the not too long term, the possibility of satisfying the need they were originally aimed at fulfilling” (page 31). This was expressed by one participant as:

“...what is the point - you’ve worked like crazy to take a holiday and to get yourself in the position to actually go on holiday and leave the office in a

reasonable state and you come back and it's just the same because it's all piled up while you've been away.” (g)

This was also connected to stage of life issues, with one participant noting that the reality of travelling with children, for example, meant that there was a recognition that certain holidays would not be enjoyable, despite the motivation to take them. This had a constraining effect for this participant on both longer distance, more impactful holidays, as well as environmentally benign ones:

“we used to camp a lot more and you know have perhaps more longer driving holidays and travel further a field and – but as I say personally think with a family a driving holiday is just horrendous because you know you just spend too much time in a car”. (f)

6.3.8 Other findings summary

In addition to the driver and constraint results a number of themes that cut across the behaviours were identified. These have not been included in this chapter but can be seen in Appendix 2. These data indicate that despite expressions of concern about the environment, particularly climate change and to a lesser extent human suffering, there is only a limited understanding of environmental issues and only minor behavioural actions taken to mitigate them. The superficiality of the concern can be seen in the expressed desire to increase consumption if incomes rose. The conflicts between participants' feelings about the environment and the reality of their consumption is generally unconscious and at some points this unconscious conflict is extremely stark. However, for all the participants there was at least some recognition that they are not doing as much as they felt they should, but these sentiments were mitigated by varying excuses for this situation.

The results also suggested that respondents may demonstrate relatively strong environmental concern and biospheric values, and to a lesser extent altruism. However, the qualitative stage reinforced the notion of value/orientation-action gaps where environmental views were generally unrelated to their actual consumption. Therefore, it was hypothesised that the quantitative stage would

show that the actual and desired consumption of leisure flights, cars and products would be unrelated to their psychological orientations. Secondly, the qualitative analysis suggested that climate change concern is likely to be the most important issue for respondents to the quantitative stage, compared to energy concern or environmental protection concern.

The role of wealth in ramping up participants' consumption was evidenced, as was the reality that an increase in income would result in the fulfilment of pre-existing desires for certain holidays, cars and products. The role of work in providing both a positive and negative influence over the environmental impact of holiday-taking was also noted.

6.4 Chapter conclusions

This chapter has outlined the analysed qualitative results. The themes identified, building on the literature review, provide a basis for selecting the most appropriate items for the quantitative stage. These themes and items are summarised in the methodology chapter (Chapter Five, Figure 5.5). As well as fulfilling the primary objective of informing the questionnaire design through analysis of needs-based motivations and constraints, the qualitative stage also provided some information about the psychological orientations of HIH and other drivers in respect to ESC.

CHAPTER SEVEN

Quantitative results

7 QUANTITATIVE RESULTS

7.1 Introduction, and structure of the chapter

This chapter will present the analysis of the questionnaire data. As described in previous chapters, the quantitative research, which comprised of a questionnaire, is the second stage of the multi-method research of this thesis. As outlined in Chapter Five, it provides the main primary research in order to identify social marketing insights via the objectives of this thesis which are:

Objective One: To identify the key environmentally-significant psychological orientations and socio-demographics of higher-income householders and how these relate to a selection of environmentally-significant consumption behaviours.

Objective Two: To provide insights into the needs-based drivers and constraints for higher-income householders in respect to a selection of environmentally-significant consumption behaviours.

Objective Three: To explore the differences between participants in a specific Global Action Plan household campaign and the general higher-income population

After an overview of initial data and sample considerations, the main body of the chapter will be split into three main sections, reflecting the objectives of the research: Section 1 will detail data transformation and the results of the psychological and socio-demographic variable analysis (Objective One). Section 2 will analyse the drivers and constraints of ESC categories (Objective Two) using the items formed by the qualitative stage (Chapter Six) with some modification prior to implementation (see Chapter Five for details). Section 3 will assess the Global Action Plan respondent data and assess its statistical difference to that of the general population (Objective Three).

Although implications of the results will be discussed on occasion throughout this chapter, broader discussion of the data will be reserved for the concluding chapter (Chapter Eight).

7.2 Initial data and sample considerations

Of the 1266 general households contacted, 211 questionnaires were returned. This constitutes an overall 16.7% response rate. The responses were in very similar proportions across the three geographic areas, to the proportions mailed to these areas. Of the 211 questionnaire received, 22 were unusable: 13 of these were blank or not enough questions were completed, 8 were returned undeliverable and one indicated they were part of the GAP Small Change Programme and so were transferred to the GAP sample (to be discussed in Section 3). Therefore there were 189 usable questionnaires. Although there were unanswered questions amongst the 189 usable questionnaires, these tended to be restricted to the odd question. As can be seen in the data analysis, there were, in general, very few missing values for the key questions asked. As such it was deemed appropriate to include these questionnaires as their value outweighed their potential limitations. Details of the numbers mailed and responses received are captured in Table 7.1.

Table 7.1 Questionnaire numbers and responses by geographic sample

	Questionnaires mailed	Sample % of total	Valid responses received	Valid response %	Number of respondents higher-income or not specified	% of valid responses for group higher-income	Contribution to final higher-income sample %
Bovey	504	40%	85	17%	44	52%	40%
Dawlish	530	42%	77	15%	48	62%	44%
Shaldon	232	18%	27	12%	18	67%	16%
Combined	1266	100%	189	14%	110	60%	100%
	Total	Total	Total	Average	Total	Average	Total

Rather than relying on the CACI database to provide *de facto* higher-income respondents, a question on income was included to ensure only those households earning over £40,000 were included in the final data set. Although there was a risk that this would put people off responding at all (Northern Ireland Census Office 2007), it was decided it was an important inclusion so that the quality of the data could be assured. Of the 189 usable questionnaires, 79 (41.8%) of the households identified themselves as being below the £40,000 income threshold and therefore

could not be used as part of the higher-income sample. The final general sample of higher-income respondents was therefore 110 as detailed in Table 7.1.

While the response rate could be considered low, it is not dissimilar to other mailing response rates, for example Burroughs and Rindfleisch (2002) who using reminder and repeat mailing techniques resulted in a 20% response rate. Similarly, Schaninger and Danko (1993) reported 17% response rates.

In the case of this research a small response rate was expected, as discussed in Section 5.5.2.1. As previously discussed, wealthy groups are known to be less likely to fill in questionnaires, particularly where personal questions are asked. Additionally, the strategy taken was for a long questionnaire that would allow for broad exploration of the topic, rather than a short questionnaire focused on a narrow topic. Although the precise effects of questionnaire length are uncertain it is possible this reduces the response rate (Burchell and Marsh, 1992; Jepson et al. 2005). Additionally, although face-to-face contact and postal reminders are known to increase response rates, it was also known higher-income groups can be more protective of their privacy and so it was decided to use the financial resources available for a single posting approach to a larger number of householders.

Although, in absolute terms, the sample attained ($n=110$) could be considered small, in relation to the full group population of HIH in the geographical areas, which was estimated to be 1266 by CACI, this represents around 9%. As a sample of a population, it is similar to response rates to other surveys. Valentine and Fleishman (2008), for example, received a response rate of a sample of their entire population group of 9.3% which they describe as modest. Others suggest that the question of acceptable survey response rates should be kept in balance with other factors (Hunt, 1990; Krosnick, 1999; Visser, Krosnick, Marquette, and Curtin, 1996). Hunt states that results should not be dismissed “on the basis of potential nonresponse bias – no matter what the response rate is – unless there is good reason to believe that the respondents do in fact differ from the nonrespondents on the substantive issues in question and that these differences would make the results of the study unreliable”. In this study, it was identified that

the constraining forces on non-response were the length of the questionnaire, the lack of follow up reminder (for practical as well as methodological reasons) and the privacy inclination of wealthier groups, especially in respect to the personal nature of the questions. None of these issues could be considered to substantively impact on the topics in question for this study.

The acceptability of the sample size can be formally analysed using Cochran's (1977) sample size formula, which is a popular way to calculate necessary sample size based on the type of important data in a survey (Bartlett et al., 2001). In the case of this study, Likert scales were the most commonly used scales and using the method described by Bartlett et al. (2001) Here, Likert items are considered as continuous data, whereas the categorical data test refers to dichotomous variables, such as gender. Based on this formula the sample size necessary was 89. This was calculated using the formula

$$n_0 = \frac{(t)^2 * (s)^2}{(d)^2}$$

Here d = the margin of error of the mean that the researcher is willing to accept, which in this case has been set at 5%, meaning a confidence that the true mean of a five point scale is within +- .25 (.05 * the five points on the scale). t = 1.96 and is based on the commonly utilised alpha level of .05, or .025 in each tail of a two-tailed test. This represents the probability of a Type I error, where the differences revealed by statistical tests in reality do not exist, in other words, the acceptable risk that the true margin of error exceeds the acceptable margin of error described above (5%). s = the standard deviation of the population based on the number of points on the Likert scale divided by number of standard deviations, for this, Bartlett et al. (2001) describe it is acceptable to use the deviations either side of the mean, which in the case of a 5-point scale would be four, two either side. This results in a calculation of $(1.96^2 \times (5/4)^2) / (5 \times .05)^2 = 96$. If this figure is more than 5% of the population, which it is, a final correction formula is applied to arrive at the final sample size. This formula is:

$$n_1 = \frac{n_0}{(1 + n_0 / \text{Population})}$$

This equates to $96 / (1 + (96/1266)) = 89$. This means that the actual sample of 110 attained could be considered acceptable, based on the population estimate by CACI and the margins of error described above. Beyond this sample, the results cannot reasonably be extrapolated but rather used as an indication of factors that may be significant.

Table 7.1 details the response rates. A large proportion of the 110 HIH respondents (83%) answered the income question. 19 respondents left the income question blank, although it is unknown how many people did not return their questionnaire at all due to its inclusion. After deliberation it was decided to retain the 19 non-responses as part of the sample, because firstly, the mode of responses of those that answered the income question was above the £40,000 threshold and, secondly, more of those who answered the income question were in the higher-income category and therefore it is assumed the non-respondents are more slightly more likely to fall into the higher-income group, lastly, for those 10 respondents who abstained from the income questions, but answered the asset question, the modal and mean response was more than £300,000 suggesting access to high levels of financial resources.

Although the large, lower-income response rate highlights limitations with CACI's Paycheck system, the targeted sampling strategy appears to have reduced the lower-income response from the 75-85% that would be expected by chance (Section 5.5.2.1 for details), to 41.7%. For comparison, a survey carried out on the total population of a similar geographic area yielded 673 responses, with only 8% (n=54) in the approximate upper 25% income bracket (Barr, 2001). In this context, it is positive that the survey resulted in 48.1% of respondents identifying their households as HIH.

Of the 86 GAP households contacted, 28 GAP participants responded (32.6%), which was raised to 29 when the respondent from the general sample was added. Of the 29 respondents, 9 (30%) identified themselves as having a household income of over £40,000, which was higher than was expected by chance (15%-

25% see Section 5.5.2.1 for details). Only four people did not indicate their income levels. Following the same procedure applied to the general sample these were excluded from the sample because firstly, the mode response of the sample was an income of under £29,999 and secondly, it is assumed the non respondents are more likely to fall into the lower-income group, based on 64% of those who answered the income question being in the lower-income category.

The implication of the small sample for the GAP analysis, and all further GAP considerations will be dealt with in Section 3 of this Chapter.

7.3 Arriving at the final sample

As outlined in Chapter Five, three geographical sub-areas within the Teignmouth area were chosen in order to represent a range of environmental community level action. Shaldon is considered to have no notable organised environmental action, Bovey has a strong group driving community action on environmental issues and Dawlish has been subject to facilitated action, through GAP's activity in the area.

The benefits of maintaining these as separate samples would be to compare any meaningful differences between the areas in terms of the objectives of the research. However, given the low response rate, combining the samples in a single weighted sample would overcome the small sample issues, creating a sample size 110, above the desirable level of 89 as calculated in Section 7.3. There were a number of further factors that supported merger of the samples. Firstly, the lack of data on household income means the profile of the higher income population of Teignbridge, Devon or the UK is not available and therefore it is not possible to assess if the sample is representative. Therefore, a merged sample would not affect representativeness compared to the general population.

Secondly, the aim of the research is to explore the features of those with higher-income as they relate to high-energy consumption and does not attempt to carry out causal research at this early stage of topic consideration. Therefore, merging the sample will not jeopardise the aims of the research. Thirdly, the three

geographic samples are represented in very similar proportion in the combined higher income sample to the proportions initially sampled. Lastly, by understanding any statistical differences between the samples that exists, any important variables that are highlighted by the results can be discussed in relation to known differences between the geographic areas, *post-hoc*.

In order to understand if there were significant differences between the samples, and where these lay, a Kruskal-Wallis test, a non-parametric test for difference between multiple samples, was performed, to understand if the samples were significantly different from each other. This was followed up by a series of three Mann Whitney U-tests for each of the sample combinations as recommended by Field (2009). Exact tests were run for the U-tests to improve the accuracy, which is recommended where the sample size is not overly large. A Bonferroni correction was applied because three samples were being compared and this could be considered a family test because the samples are related in terms of their intended use (Hochberg and Tamhane, 1987). The $1/n$ equation was therefore applied (0.05 (standard error rate)/3 (number of comparisons) meaning all effects are significant at below the $.0167$ level (Field, 2009). All the psychological and socio-demographic variables that were to be analysed were assessed. The tests revealed that the significant differences between the groups were limited. Respondents from Bovey were significantly younger than respondents from Shaldon ($U=224$, $r=.35$, $p<.0167$) and respondents from Dawlish ($U=736$, $r=.27$, $p<.0167$). This appeared to be reflected in the lower number of 60-74 years old in the households of respondents from Bovey compared to Shaldon ($U=196$, $r=.51$, $p<.0167$) and Dawlish ($U=673$, $r=.34$, $p<.0167$). Additionally it was found that respondents from Shaldon took significantly more long-distance holidays than respondents from Bovey ($U=248$, $r=.34$, $p<.0167$).

This last finding is particularly interesting as it seems to indicate a specific difference in environmentally-significant behaviour between what was considered the most environmentally aware geographic area and the least. However the lack of significant difference between values, materialism, environmental concern or identity suggests that this is not necessarily based directly on psychological

antecedents. This could, instead, be connected to the fact that participants from Shaldon are older, and the results discussed below indicate that age is related positively to long-distance holiday-taking ($r_{\tau}=.24$, $p=<0.01$). As the differences were limited and could be pinpointed, it was decided that, on balance, a merger of data was appropriate, with the understanding that the differences found will be noted and applied specifically in the discussion and conclusion chapter (Chapter Eight).

7.4 Socio-demographics of the combined sample

Table 7.2 details the socio-demographics of the combined sample. This shows that the majority of respondents are in the older categories with 86% of respondents over 41 with 57% over 51, this is higher than the proportion of over 50 year olds in Teignbridge indicated by the 2001 Census (42%) which is higher than the UK average of 33%. The average number of people in a household was 2.9 which, again, is higher than the average for Teignbridge (2.29) and the UK (2.36) (Office for National Statistics, 2001). Most respondents live in three person (44%) and four person (28%) households, 10% live in single households and a further 9% live in couples. The final 11% live in households of five and over, with a maximum of seven.

The ratio of males to females is 59:41. Educationally, the sample is split quite evenly between those with a first degree or higher (50%) and those without. This is a far higher proportion than for Teignbridge (13%) and nationally (14.2%). 60% of the sample is in paid work, with a further 31% retired. Wealth wise, most of the sample (74%) have income at the lower levels tested, between £40,000 and £80,000, but 67% of the sample has assets over £300,000 with 12% over £1,000,000. Data are not available on the socio-demographic make-up of upper income quartile either in the UK or in the Teignbridge area for comparisons to be made. These socio-demographic variables and their implications on the energy use of HH, will be investigated further in Sections 1 and 2.

Table 7.2 Socio-demographic frequencies

Household income (n=91)			Age (n=110)		
	Frequency	Sample %		Frequency	Sample %
Over £40,000	42	46	Under 29	2	2
Over £60,000	25	28	30-40	13	12
Over £80,000	13	14	41-50	32	29
Over £100,000	9	10	51-64	42	38
Over £300,000	2	2	65+	21	19
Household assets (n=99)			Education (highest qualification) (n=109)		
	Frequency	Sample %		Frequency	Sample %
£0-74,000	7	7	No qualifications	4	4
	6	6	O-levels/ GCE /GCSE	21	19
Over £75,000			A-levels	9	8
Over £150,000	19	19	Vocational Qualification	21	19
Over £300,000	38	38	First degree	34	31
Over £600,000	17	17	Higher degree	20	18
Over £1,000,000	12	12			
Number of people in household (n=107)			Working status (n=109)		
	Frequency	Sample %		Frequency	Sample %
1	2	2	Full-time paid	39	35.8
2	8	7	Part-time paid	19	17.4
3	48	44	Unwaged	3	2.8
4	10	9	Retired	34	31.2
5	29	26	Voluntary worker	5	4.6
6	6	6	Self-employed	8	7.3
			Seeking employment	1	0.9
7	3	3			
8	1	1			
Gender (n=110)			Number of babies (5 and under) (n=106)		
	Frequency	Sample %		Frequency	Sample %
Male	65	59	0	91	82.7
Female	45	41	1	7	6.4
			2	8	7.3
Number of children (6-15) (n=106)			Number of young adults (16-24) (n=106)		
	Frequency	Sample %		Frequency	Sample %
0	79	71.8	0	82	74.5
1	10	9.1	1	14	12.7
2	13	11.8	2	9	8.2
3	2	1.8	3	1	0.9
4	2	1.8			

Number of adults (25-59) (n=106)			Number of pensioners (65 - 74) (n=106)		
	Frequency	Sample %		Frequency	Sample %
0	36	32.7	0	71	64.5
1	16	14.5	1	14	12.7
2	52	47.3	2	21	19.1
3	2	1.8		71	64.5

Number of elderly (75 and older) (n=106)		
	Frequency	Sample %
0	99	90
1	2	1.8
2	4	3.6
6	1	0.9

7.5 SECTION 1 – Higher-income householders and psychological, socio-demographic and behavioural variables

This section focuses on Objective One of the research and therefore primarily considers how the psychological and socio-demographic constructs measured relate to the energy consumption of HH. It also considers how the variables relate to each in order to enhance a theoretical understanding of the constructs.

The section is split into four parts. The first part will outline data transformation and scale reliability for the psychological variables of values (biospheric, altruistic and egoistic), materialism, the affluent identity and environmentalist identity and environmental concern. Scale reliability has been tested to determine if respondents answer items in a scale in similar ways and therefore indicates if the items in the scale all relate to the same construct, for that particular sample, or if in fact some items are perhaps not well aligned. This is particularly useful when considering scales that have not been widely tested, or tested on a specific group or additionally in the case of bespoke scales.

Although the variables have been termed ‘psychological’, it is important to note that they have been interpreted in a psycho-socio-cultural sense, as outlined in Chapter

Four, meaning that their dynamics are intricately connected and shaped by the social and cultural contexts in which they exist. This is an important differentiation as it impacts on how the results are viewed and how recommendations for social marketing are arrived at in Chapter Eight.

The second part will analyse how the psychological and socio-demographic variables relate to each other, in respect to this sample, using descriptive and bivariate analysis. The third part of this section will investigate how the variables relate to aggregate energy use using bivariate analysis. Finally, the fourth part of this chapter will analyse how psychological and socio-demographic variables relate to the categories of consumption that comprise aggregate energy use – these categories being long-distance and European leisure flights, large-engine cars and household fuel. New durable product consumption is also analysed but does not form part of the aggregate energy use figure, as described in Chapter Five and Section 7.5.1.5 below.

As well as relationships with energy use from category level consumption (leisure flights, large-engine cars and new durable products), relationships with householder's ideal energy use in these categories, and the importance of these categories, will be analysed. Drawing from the summary of the results obtained, the section will end by highlighting key questions, which may be illuminated by the drivers and constraint analysis of Section 2 of this chapter.

7.5.1 Data transformation and scale reliability

The value, materialism and identity scales were measured for internal consistency. For pre-existing scales, scale reliability was performed in order to understand if the scales were interpreted by respondents in a way that suggests the scale was working to measure the underlying construct. Scale reliability testing also adds to the body of knowledge on the validity of the scales. For the affluent and environmentalist identity constructs, where the scales were bespoke for this research, scale reliability indicates the validity of those scales. Cronbach's Alphas (α) were produced, which indicates the extent to which answers for one question in

the scale were answered in a similar way to other items on the same scale. A Cronbach α above .7 is good, with a score above .8 desirable, however, where psychological constructs and therefore a wide variety of constructs are being measured, rather than more stable factors of negligence or ability, Alpha's below .7, are often to be expected (Kline, 1999).

Following Gatersleben et al. (2009), new variables representing the mean of the values, materialism and identity scales were produced to "reduce the number of variables available for further data analyses and to develop robust measurements of the relevant theoretical concepts". (p.16). Computing the means for Likert scales is a practice frequently employed (Barr, 2001). Some argue that the mean of a Likert-type item or scale is not a meaningful figure as it does not represent an actual response because the distance between item scores can not be assumed to be even (Field, 2009). However, if taken to be indicative of the overall inclination of the participant, rather than the number relied on per se; the mean is a useful way of analysing and comparing data without drawing precise conclusions from the number. Scale reliability and data transformation will now be presented for each concept.

7.5.1.1 Values

As outlined in Chapter Five the values of biosphericism, altruism and egoism were tested using a 13 item scale, with four items testing biosphericism, four items testing altruism and five items testing egoism. High reliability scores using Cronbach's Alpha (α) were obtained for the biosphericism scale which had $\alpha=.80$. However, the egoism scale had $\alpha=.65$ making it less reliable and less than the consistency of $\alpha=.78$ found by Gatersleben et al (2009), although not far from the ideal level of $\alpha=.70$. The altruism scale returned $\alpha=.50$ which could be considered fairly poor, even given the psychological nature of the construct. Gatersleben et al. (2009) also found the altruism scale to be less reliable ($\alpha=.60$). Therefore, for the altruism scale and to a lesser extent the egoism scale, not all items may be a good representation of the underlying concept being measured. A new variable was created representing the mean of the four responses to each value scale. There

were 11 missing responses in total across all three values and all 110 respondents, resulting in biospericism $n=107$, altruism $n=109$, egoism $n=106$.

7.5.1.2 Materialism

Materialism was originally to be tested using a 22 point scale. However, regrettably, two items were missed from the materialism scale during administration of the questionnaire, it is not clear how this happened but appears to be related to the fact they were at the bottom of the table and may have been deleted in error when formatting. One item missed was from the original 18 item scale of Richins and Dawson (1992) and the other was one of the four included in an adapted scale by Gatersleben and colleagues (2009). Consideration was given to using the 6 item scale which Richins (2004) indicated was a potentially valid shorter scale. However when the internal consistency of both the 20 point scale and the 6 point scale were assessed, both were above the recommended level of .7, but the 20 point materialism scale had a higher score of $\alpha=.84$, whereas the 6 item scale resulted in $\alpha=.73$. The 20 point materialism scale score was slightly lower than the alpha produced by Gatersleben et al. (2009) ($\alpha=.89$) and in line with the mean $\alpha=.85$ found across numerous studies reported by Richins (2004). The longer scale was retained because of this result and also because of the fact that such a long scale would mean that the effect of the two missing values would be unlikely to significantly alter the mean scale results. Additionally, the internal consistency on the retained scores was high and Gatersleben et al (2009) also found high consistency when the full 22 were included. An additional variable was added to represent the mean of the materialism scores. There were eight missing responses across all 110 respondents and 20 items resulting in $n=105$.

7.5.1.3 Identity

Environmentalist and affluent identities were tested using five item scales developed specifically for this study, based on consideration and evidence from the literature, as outlined in Chapter Two, and therefore the scales had not been previously tested for internal consistency. The results for both identity scales indicated they were both reliable, with the affluent identity scale producing $\alpha=.69$, just below the recommended .7, with no item's removal increasing or decreasing

the scale reliability by very much. This can be seen in Table 7.3 which indicates the scale Alpha and what this would change to if a particular item was removed from that scale. This is a useful way to see if and how the reliability of a scale can be improved (Field, 2009). Table 7.4 indicates that the environmental identity scale has $\alpha=.76$, which would have been improved to $\alpha=.84$ if the item ‘in general it is seen as positive to be an environmentalist was removed’. The results indicate the item is less strongly aligned to the other items, but the internal consistency is still high with it included ($\alpha=.76$) and for the affluent identity the scale’s consistency would be reduced if the item was removed ($\alpha=.64$). This suggests it is worth retaining the item.

Table 7.3 Reliability of the affluent identity scale

$\alpha = .69$	α if item deleted
I see myself as a financially successful person	.62
Others see me as a financially successful person	.64
I find I relate well to financially successful people	.62
In general, it is seen as positive to be a financially successful person	.64
Many of my career decisions have been motivated by the desire to be financially successful	.70

Table 7.4 Reliability of the environmentalist identity scale

$\alpha = .76$	α if item deleted
I see myself as an environmentalist	.63
Others see me as an environmentalist	.63
I find I relate well to environmentalists	.66
In general, it is seen as positive to be an environmentalist	.84
Many of my career decisions have been motivated by the desire to be an environmentalist	.74

There were 11 missing values across both identity scales and all 110 respondents resulting in affluent identity $n=106$, environmental identity $n=109$.

7.5.1.4 Environmental concern

The environmental concern instrument was created for this study based on a number of considerations from the literature as outlined in Chapter Two.

Environmental concern was measured by asking respondents for the two most

important (non-ranked) issues facing the UK from a list of 15 possible answers. Issues representing climate change, environmental protection and energy-related issues were included as component measures of the environmental concern construct. Space was given for other issues to be entered by respondents, but none of the answers given in the 'other' section were energy-, environment- or climate change-related. Four new variables were created to represent environmental concern. Firstly, three variables were created for each of the components of energy, climate change and environmental protection. Where a respondent had marked the issues as one of their top two it was coded with a 1, if not then a 0 was coded. Additionally, a variable was created which gave respondents a score of 0,1 or 2 depending on if they had none, one or both of their top two issues facing the UK as either climate change, environmental protection or energy issues. This figure was deemed to be a measure of overall environmental concern.

7.5.1.5 Energy consumption

A measure of energy consumption for each respondent was created by converting the responses to the questions on household leisure flights, car ownership and usage and household fuel consumption, to an estimated kWh figure per adult member of the household using estimated CO₂ figures and standard conversion factors. Details of this process and the assumptions made in order to arrive at figures are presented in Appendix 5. Converting reported consumption to a per adult kWh figure allows all the behaviours, except product consumption, to be merged into one behavioural figure and results in a standardised figure for category level behaviour.

Due to the wide range of potential products encompassed in the category, 'new durable products', it was not possible to produce a meaningful estimate for products, instead a products per adult figure was created by taking the lower level of the category ticked and dividing it by adults in the household. The number of leisure flights did not need to be converted to a per adult figure, but for cars and fuel this approach resulted in a more accurate understanding of the car and fuel energy use for the respondent and the household members. Income and assets

were also converted into a per adult member figure by taking the lowest figure in the category ticked, apart from the first asset option which was divided by two, and then dividing this figure by the number of adults in the household.

As outlined in Chapter Five, although the energy consumption figure is derived from reported figures, it is assumed that the issues often associated with self-reported figures, particularly those related to socially desirable responding, will be minimised in this study because of the conscious lack of reference to environmental issues. Reference to environmental factors was only made indirectly through the identity and values scale at the end of the questionnaire (see Chapter Five for more detail).

7.5.2 Psychological variables: Descriptive and bivariate analysis

This section will firstly examine how values, materialism, environmental concern and identity are held by the HH sample using descriptive statistics. This will indicate whether the psychological orientations of the sample should support, or hinder, ESC. Consideration will then be given to how the variables relate to each other in the sample and where conflicts between different orientations exist, which may affect environmentally-significant consumption.

7.5.2.1 Value construct descriptives

As outlined in Chapter Five, although there are a number of approaches to assessing whether a value is held or not, in this study a respondent was considered to hold a particular value orientation if they had a mean score across the items of more than 3, which was the neutral value. Table 7.5 and Figure 7.1 show that on average, respondents had strong biospheric values with a mean of 4.1 on the 5 point scale, across the 4 items. Across the respondents there was a range of means between 3 and 5 with a standard deviation of 0.5 confirming that most respondents tended to hold biospheric values (96% with a mean above 3) and they tended on average to hold the value strongly (mean of 4.2).

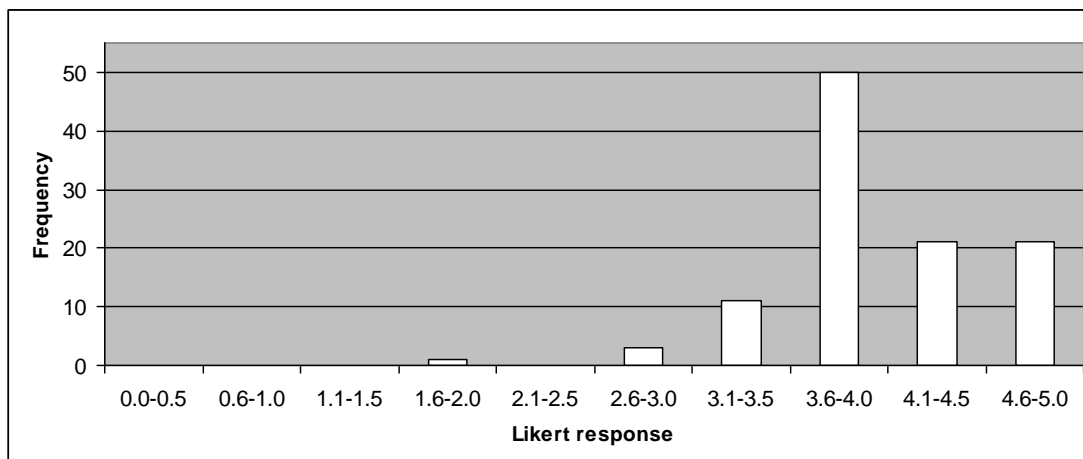
For altruistic values, a mean of 4.2 was found across the 5 items, which was again very strong and just slightly higher than the biospheric scores. There was a larger range of mean scores across respondents with the highest again being 5 but the lowest being 2 and the standard deviation from the mean being 0.5, although Figure 7.2 shows the low mean score was an anomaly to the rest of the scores, which were similar to the biospheric value means in distribution. Overall, 99% of respondents could be considered to hold an altruistic value and these had a high average mean of 4.2.

For egoism, the respondents were on average at the mid score with a mean of 3 across the 5 items. Respondents were less consistent in their views on egoism, with a mean range between 1.6 and 4.6 and a standard deviation of 0.6. Figure 7.3 shows that there was a fairly even distribution across the large range and Table 7.5 shows that 48% of respondents hold the value, with a mean score above neutral (3). This indicates that the respondents were split fairly evenly between those who held egoistic values and those who didn't. Those who did hold the orientation did not hold it very strongly, with the mean being 3.5.

Table 7.5 Value and identity construct scores

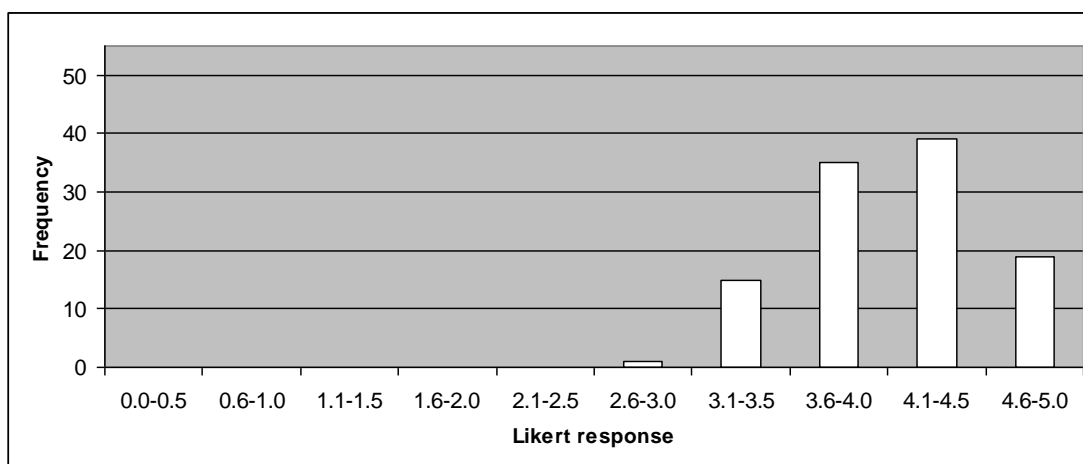
	Number of items in scale	Number of options	n =	Median	Mode	Mean	Standard deviation of the mean	Minimum mean	Maximum mean	Percentage with a positive orientation	Percentage without a positive orientation	Mean of those with positive orientation
Values												
Biosphericism	4	5	107	4	4	4.1	0.5	3	5	96	4	4.2
Altruism	4	5	109	4.3	4	4.2	0.5	2	5	99	1	4.2
Egoism	5	5	106	3	3	3.1	0.6	1.6	4.6	48	52	3.5
Materialism	20	5	105	2.45	3	2.4	0.5	1	3.5	9	91	3.2
Identity												
Affluent	5	5	106	3	3	3.2	0.6	1.2	5	54	46	3.6
Environmentalism	5	5	109	3.2	3	3.0	0.6	1.2	5	43	57	3.5

Figure 7.1 Biospheric value mean scores



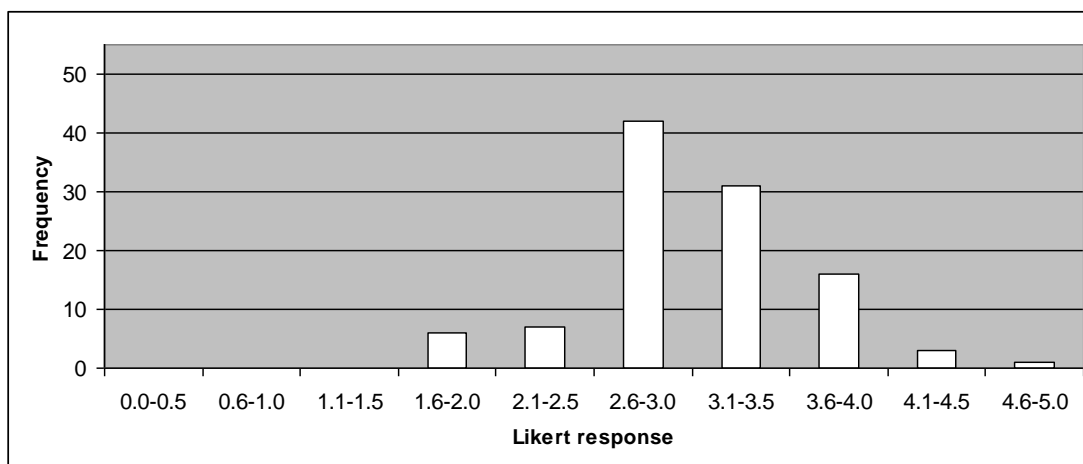
n = 107

Figure 7.2 Altruistic value mean scores



n = 109

Figure 7.3 Egoistic value mean scores

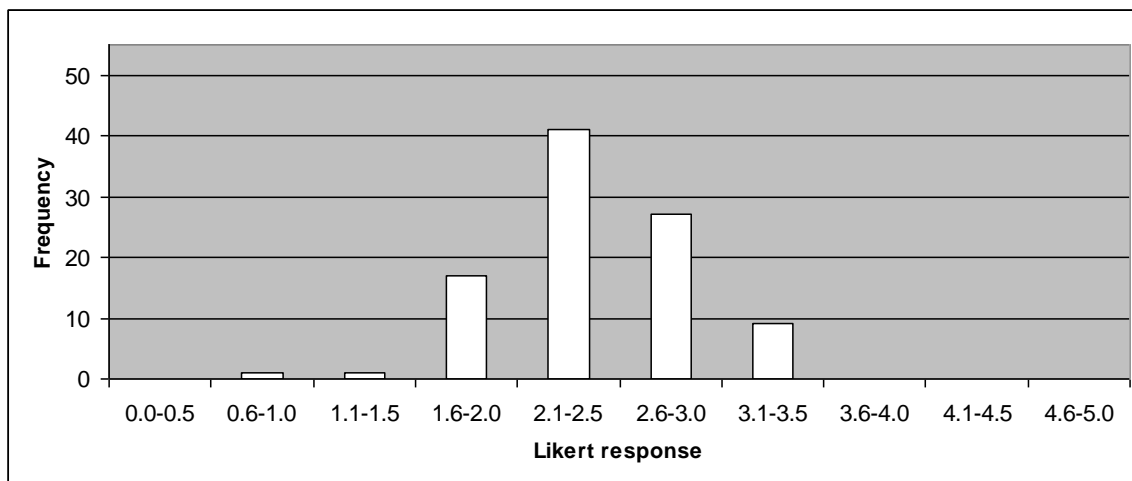


n = 110

7.5.2.2 Materialism construct descriptives

The mean materialism score across respondents was 2.4 for the 20 items, which indicates a general lack of orientation to materialistic values. The range of means was large, the lowest being 1 and highest being 3.5 with a standard deviation of 0.5. Figure 7.4 illustrates that the mean of 1 was an anomaly and respondents were actually fairly evenly distributed between 1.5 and 3.5. Analysis reveals that only 9% of respondents had a materialistic orientation with a mean score above neutral (3), and for these the mean was only 3.2. This shows that most respondents did not have a materialistic value orientation and those that did, held this value weakly.

Figure 7.4 Materialism means scores



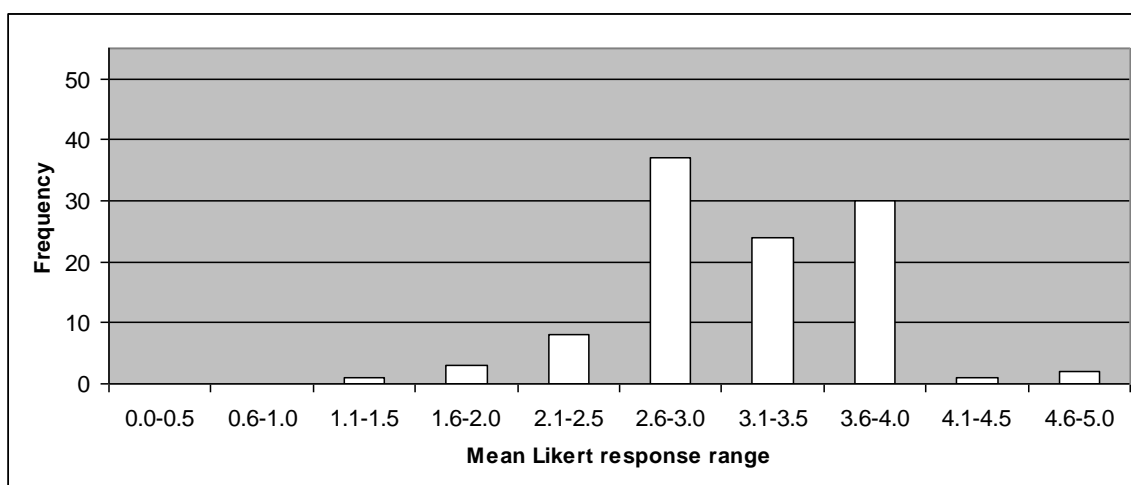
n = 105

7.5.2.3 Identity construct descriptives

The identity responses indicate that both affluent and environmentalist identities tend to be held by respondents, with the affluent identity being held slightly more frequently and slightly stronger. The mean affluent identity score of the 5 item scale for all respondents was 3.2, while the mean of the environmentalist identity 5 item scale was 3.0. Both had a range of means between 1.2 and 5 and a standard deviation of 0.6. This suggests that, on average, both identities were held similarly. Figures 7.5 and 7.6 confirm the similar distribution of the means. However, analysis reveals that more respondents hold an affluent identity (54% with a mean

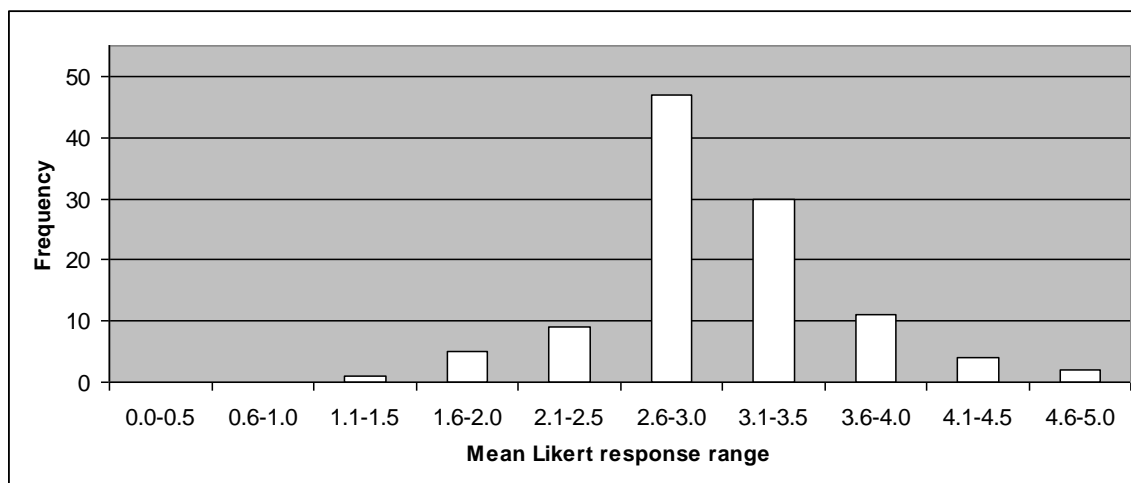
of above 3) compared to those who hold an environmentalist identity (43% with a mean above 3). Additionally, the mean of those who hold the affluent identity is slightly higher than those who hold the environmentalist identity (mean of 3.6 compared to 3.5 respectively).

Figure 7.5 Affluent identity mean scores



n = 106

Figure 7.6 Environmentalist identity mean scores



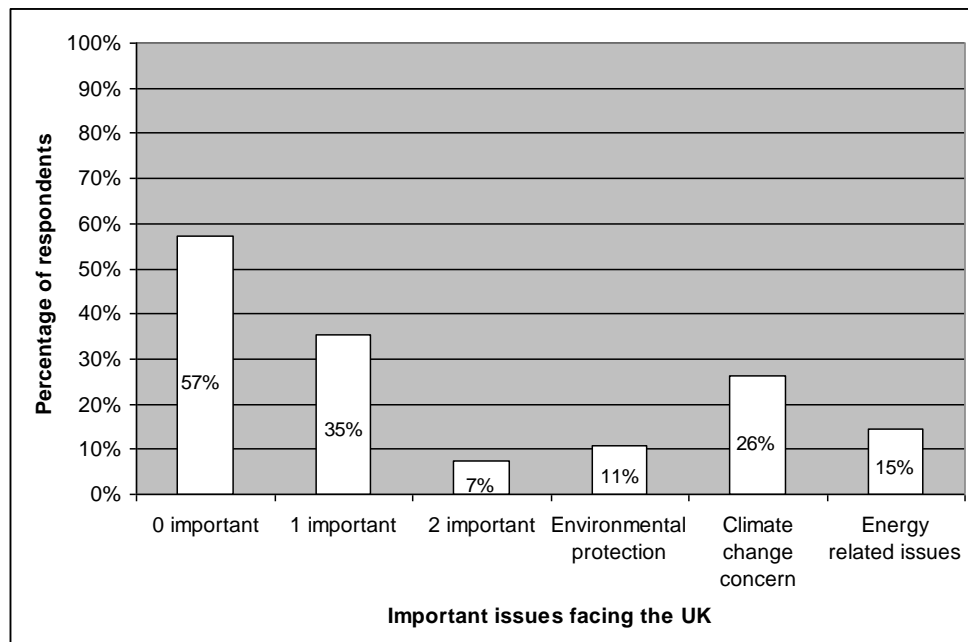
n = 109

7.5.2.4 Environmental concern construct descriptives

The aggregate environmental concern score reflects if the respondent had none, one or two of the environmental concern issues (environmental protection, climate change or energy related issues) as their top two issues facing the UK. For descriptive purposes the aggregate 'environmental concern' construct is broken down into its three constituent variables in Figure 7.7. This figure shows that a large number, but not a majority, chose at least one of the three environmental concern issues as being most important to the UK. Climate change was the most frequently chosen response, although only 26% of all respondents saw it as one of the two most important issues that the UK faced. Energy issues and environmental protection elicited even lower responses (15% and 11% respectively).

Environmental protection is the issue most closely related to environmentalism, as it is traditionally understood and measured in the Schwartz derived Biospheric values scales and the NEP, therefore it is interesting that this was the least important environmental issue for respondents and in absolute terms a concern for only a few. In most cases only one of the environmental concern issues was in a respondent's top two, with only 7% of respondents having environmental concern related topics for both of their top two issues.

Figure 7.7 Environmental concern and its components' scores



n = 106

7.5.2.5 Correlations between the psychological constructs

The strength of relationships that can be interpreted from correlation coefficients depends on a number of factors. With the same sample size, non-parametric tests are known to be 'weaker' than parametric tests due to their greater likelihood to return the positive hypothesis, because ranks are used rather than observational values. However, as discussed in Section 5.6, Kendall's Tau, which is used in this analysis, is more efficient than Spearman's rho in this respect (Field, 2009).

The interpretation of relationship strength also depends on the variables being considered. When psychological constructs are being measured where outcomes are likely to have many causes, it is unlikely that variables tested will be very strongly related (De Vaus, 2001), as might be expected in the natural sciences. Furthermore, it is often the relative relationships that are of interest, or interpretation in reference to the construct, rather than the absolute correlations.

Kendall's Tau was calculated for all variables except environmental protection concern, climate change concern and energy concern which were dichotomous variables. Where pairs of dichotomous variables are being assessed, the Phi coefficient was calculated, otherwise, where only one was dichotomous, the Mann Whitney U-test of independent samples was used. The z scores resulting from the Mann Whitney U-test were converted into an r score of the size of effect observed, using the formula $r = Z/\sqrt{N}$ (Rosenthal, 1991:19). The direction of the effect was assessed using the Mann Whitney mean rank scores. The r score is used for reporting in the tables to allow for standardised comparison, but where significant, the full results will be reported in the text. Where Phi or Mann Whitney U-tests were used to calculate the r statistic, this is indicated in Figure 7.9 using 'Phi' and 'MW' respectively. Where variables are inter-related, the correlation coefficient and significance have been reported (Table 7.6) but not highlighted in grey.

The results as shown in Table 7.6 and Figure 7.9 indicate that, as theoretically and empirically suggested by the literature (Schultz and Zelezny, 1999, 2003; Gatersleben et al., 2009), there is a separation of the self-transcending values of

altruism and biosphericism and the self-enhancement values of egoism and materialism. This is apparent not just in the strong correlations between the self-transcending constructs and self-enhancing constructs, but also in the significant negative correlation between materialism and: biosphericism ($r_t = -.17$, $p < .05$), altruism ($r_t = -.25$, $p = .01$) and the environmentalist identity ($r_t = -.16$, $p = .05$). As predicted, environmental concern was opposed to materialism ($r_t = -.20$, $p = .05$) and related positively to the self-transcending orientation, via the relationship with biospheric values ($r_t = .24$, $p = .01$), and most significantly with the environmentalist identity ($r_t = .37$, $p = .01$).

The data indicate materialism is an important orientation that negotiates a repellent relationship between the two spheres; those who hold this value are less likely to have pro-environmental value orientations, an environmental identity or environmental concern. However, although statistically significant, materialism was a value orientation only held by 9% of the respondents (as outlined in Section 5.3.2.2 above), therefore, it is not likely to exert much influence here. As outlined in Table 7.5, 48% of respondents held an egoistic value orientation and 54% an affluent identity, therefore it is likely these are more important negative influences over behaviour. Although there was not a statistically significant negative relationship between egoism or the affluent identity or any of the self-transcending orientations, the relationships between the constructs as represented in Figure 7.9 suggests they may be somewhat opposed. Figure 7.9 is a diagrammatic representation of the significant correlation coefficients found in Table 7.6, with the non-significant relationship between the two identities also included. Positive relationships are linked with a solid arrow and negative relationships with a dashed arrow.

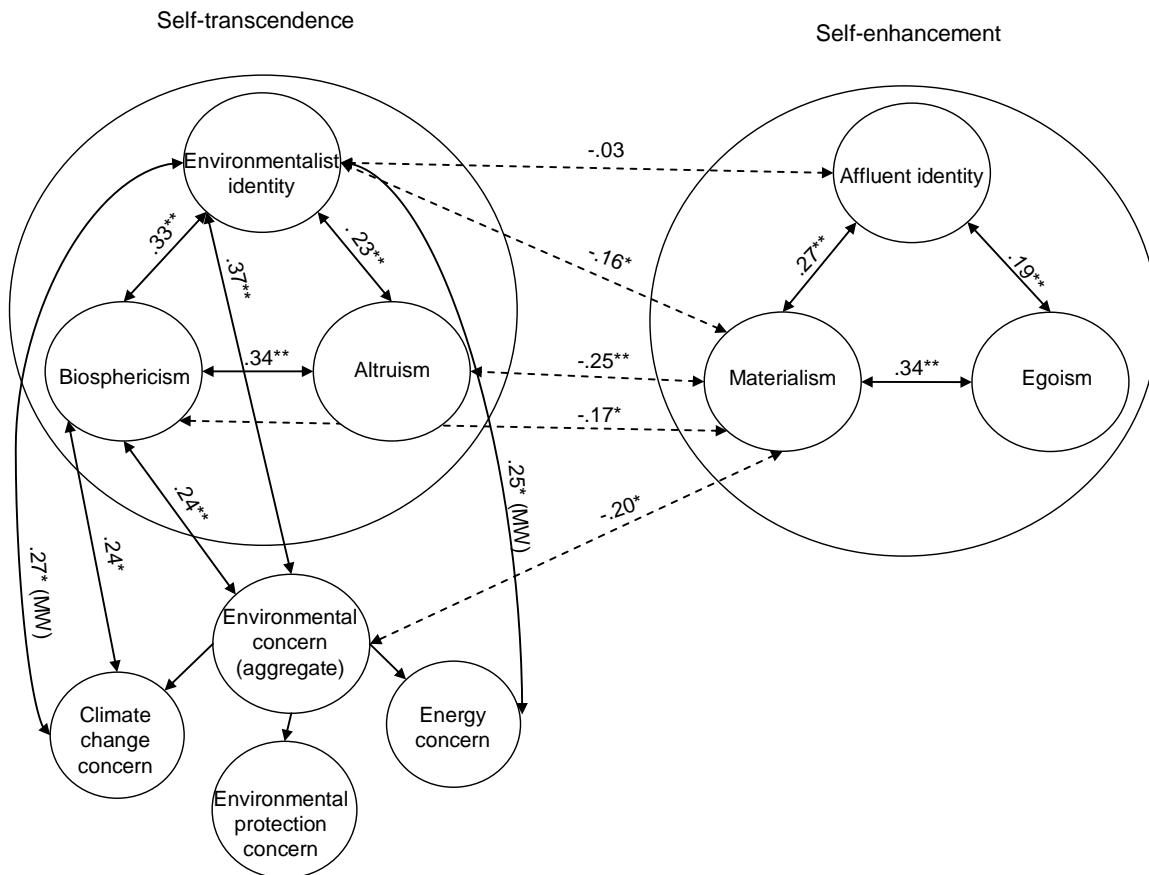
At a component level of environmental concern, environmental protection was not influential in the environmental concern relationship. Instead climate change concern was related significantly related to biospheric values ($U = 764$, $z = -2.48$, $r = .24$, $p = .05$) and the environmentalist identity ($U = 764$, $z = -2.816$, $r = .27$, $p = .05$).

Additionally, concern over energy related issues was also correlated with the environmentalist identity ($U=454$, $z=-2.56$, $r=.25$, $p=.05$). There was no significant negative correlation between egoism and altruism or environmental concern, however, there was a significant moderate relationship between egoism and materialism ($r_{\tau}=.34$, $p=.01$), suggesting a possible derived relationship. However, the conflict analysis below (Section 7.3.2.6) suggests that egoism is a value that is often held at the same time as biosphericism and altruism, which would conceptually explain a lack of negative relationship between egoism and any self-transcending orientation.

Table 7.6 Inter-relationships between psychological variables

	Biospheric values	Altruistic values	Egoistic values	Materialism	Environment-alist Identity	Affluent Identity	Environmental concern (aggregate)	Environmental protection concern	Climate change concern	Energy related issues concern
Psychological variables										
Biospheric values	1									
Altruistic values	.34**	1								
Egoistic values	-.01	-.06	1							
Materialism	-.17*	-.25**	.34**	1						
Environmentalist Identity	.33**	.23**	-.09	-.16*	1					
Affluent Identity	.02	-.07	.19**	.27**	-.03	1				
Environmental concern (aggregate)	.24**	.09	-.10	-.20*	.37**	-.01	1.0			
Environmental protection concern	.10	.04	-.04	-.17	.18	.07	.42*	1.00		
Climate change concern	.24*	.14	-.13	-.17	.27*	-.13	.72*	.06	1.00	
Energy related issues concern	.11	-.01	.05	-.05	.25*	.11	.54*	-.06	.05	1.00

Figure 7.8 Values, materialism, identity and concern construct relationships



* $p < .05$, ** $p < .01$, MW = Mann Whitney U-test

Source: Author

7.5.2.6 Conflicts between the psychological constructs

Although there seems to be a split between the self-transcending and self-enhancing value orientations and identity, at the same time there are many cases where one or more orientations from both sides are held at the same time.

Environmental concern has been excluded from this conflict analysis because although related to values and identity, it is not a value or an identity, and no contrary self-enhancing concern issues have been identified or measured in this study.

For most respondents (59%), a conflict of some kind occurs between either their identity or their values. 13% of respondents have both a value and an identity conflict. Table 7.7 details value and identity coherence and conflicts for

respondents. 51% of respondents have conflict in their values, holding at least one value from each side, with 5% holding all four value orientations at the same time. 24% have conflict in their identities, holding both types of identity at the same time. For those with a value conflict, the most common conflict (40% of all respondents) is to hold both types of self-transcending value orientations and at the same time one self-enhancing value. In all but two cases this self-enhancing value orientation is egoism. In all but one case, where materialism is held by a respondent (n=9), a self-transcendence value is held at the same time.

Table 7.7 Value and identity conflicts

	Count	%
Value Coherence		
None of the values held	1	1
Either self-transcending OR self-enhancing held	53	48
Value Conflict		
At least one self-transcending AND one self-enhancing value held	56	51
One self-transcending AND one self-enhancing held	5	5
Both self-transcending AND one self-enhancing held	44	40
Both self-enhancing AND one self-transcending held	1	1
Both self-transcending AND both self-enhancing held	5	5
Identity Coherence		
Neither identity held	30	27
Only one identity held	54	49
Identity Conflict		
Both an affluent identity AND an environmentalist identity held	26	24
Either a value conflict OR an identity conflict	64	59
Both a value AND identity conflict	14	13

Two new variables were created out of this analysis, to allow for correlation coefficients to be calculated between the existence of a conflict and other variables that will be analysed. For identity, where both identities were held and therefore a conflict existed, a 1 was recorded. Where only one, or no identity was held, a 0 was recorded. For values, where one or more value was held from both the self-transcendence orientation and the self-enhancement orientation a 1 was recorded, otherwise a 0 was recorded.

7.5.2.7 Summary of psychological variable analysis

In summary, a number of interesting conclusions can be drawn from the bivariate analyses performed on values, materialism and identity, the implications of which will be more fully explored in Chapter Eight.

The literature indicates there is a definite split between the relationships of self-transcending orientations on the one hand and self-enhancing orientation on the other, and this appears to hold true for HIH in this study. Additionally, environmental concern is, as predicted, related to a self-transcending orientation.

- Materialism is an important orientation in that appears to create a repellent relationship between the two spheres, however, because only a small number of HIH in the sample appear to hold a materialistic orientation (9%) and not very strongly (mean of 3.2), the variable is unlikely to be overly influential for this sample. Additionally the negative relationships are not particularly strong. However, the finding reinforces the perspective that materialistic values are important for issues of sustainable consumption.
- The affluent and environmentalist identity scales, which were created specifically for this study, are initially validated in the small sample studied here. As expected, the affluent identity is related to both self-enhancement values, and the environmentalist identity is related to both self-transcendence values. Furthermore, the variable appears to be an important addition to understanding behaviour and antecedents to behaviour in that, for the sample in question, the affluent identity is most strongly related to assets, which are, in turn, most strongly related to actual energy use. Also, the environmentalist identity is strongly related to environmental concern overall, and also specifically in terms of climate change concern and energy concern (with which it is the only variable to have a relationship).
- There is no negative relationship between the affluent identity and the environmentalist identity, which might have been expected. There is also no negative relationship between egoism and the self-transcending values of biosphericism and altruism. This is somewhat explained through the conflict analysis, which shows that just under a quarter of people hold both identities

concurrently and a majority of people experience a value conflict - with egoism normally the simultaneous self-enhancing value held.

- It is useful to analyse environmental concern in broader terms than just environmental protection, as environmental protection did not have a significant, positive, relationship with any self-transcending orientation or a significant, negative, relationship with any self-enhancing orientation, as would have been expected. Instead it was climate change and energy concern that were connected to other constructs, and these variables are not encompassed in the commonly used NEP scale.

7.5.3 Relationships between psychological and socio-demographic variables and aggregate energy use

The results presented above on the psychological constructs and their inter-relationships are theoretically important. They contribute to the body of literature on the relationships between value orientations, particularly for HIH and more specifically introduce the role of identity. However, the key issue for this research is how these psychological, and the socio-demographic variables, might relate to ESC. This section addresses how the psychological variables and the socio-demographic variables (including income) are related to aggregate energy use of respondents.

In terms of socio-demographic variables, gender, age, education level, number of people in the household, age of members of the household, income per person, assets per person were assessed. It must be noted that in terms of education levels the variables of first degree and vocational qualification were swapped so that first degree was coded as a level above vocational qualification. Working status was not assessed as the categories could not be converted into a meaningful scale of unemployment to waged, nor were the qualitative responses given for occupation. Additionally newspaper readership did not produce enough similar responses for coding to be consequential.

As previously, Kendall's Tau correlation coefficients were used to test relationships in all cases except where a relationship between dichotomous variables was being tested i.e. identity conflict, value conflict, gender, energy concern, environmental concern and climate change concern (in this case Phis were calculated), or where a dichotomous variable was being tested against a non-dichotomous variable (in this case Mann Whitney U-test of independent samples was performed and converted into r scores). None of the interval level variables (e.g. number of people in a household) met parametric conditions of normal distribution, therefore a Pearson point biserial coefficient could not be calculated. Where Phi or a Mann Whitney U-test were used to calculate the r statistic, this is indicated in Figure 7.10 using 'Phi' and 'MW' respectively.

Figure 7.10 represents the significant correlations found between the variables and is a diagrammatic representation of the correlation coefficients found in Tables 7.8 and 7.9, which show the relationships between the psychological and socio-demographic variables along with aggregate energy use, and the inter-relationships between the socio-demographic variables (respectively). In Figure 7.10, positive relationships are linked with a solid arrow and negative relationships with a dashed arrow. Correlations between inter-dependent variables have been omitted, and (for ease of visual interpretation) some correlations between socio-demographic variables have also been excluded or summarised.

Figure 7.9 Psychological and socio-demographic influences on aggregate energy use

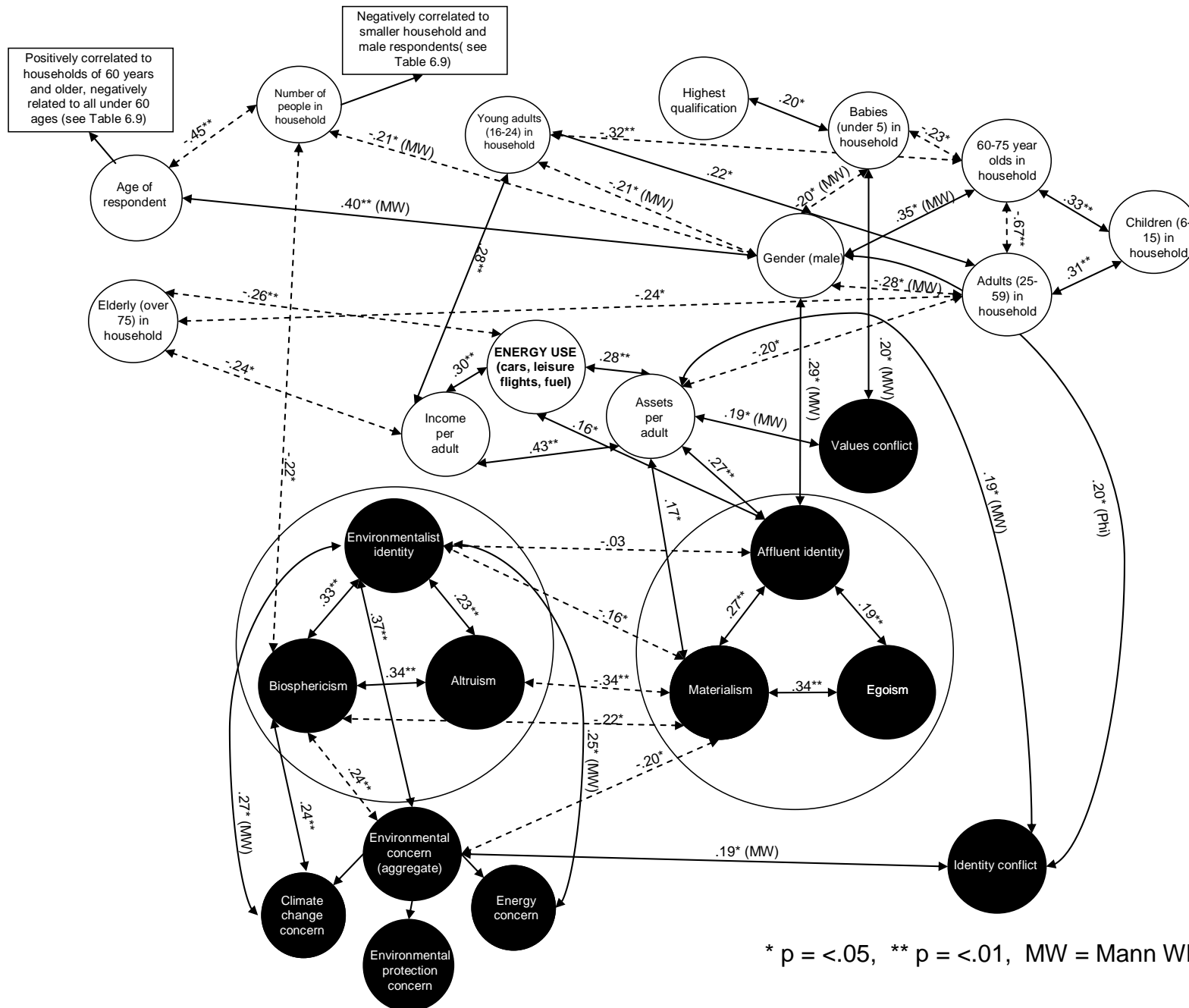


Table 7.8 Psychological, socio-demographic and aggregate energy use relationships

	Energy use (kWh per adult)	Biospheric values	Atruistic values	Egoistic values	Materialism	Environment- alist Identity	Affluent Identity	Environmental Concern (aggregate)	Environmental protection concern	Climate change concern	Energy related issues concern	Value conflict	Identity conflict
Energy use (kWh per adult)	1.00	-.05	.01	.07	.08	-.08	.16*	.08	-.03	-.11	.16	.06	-.04
Socio-demographics													
Income per adult	.30**	-.05	.08	-.01	-.05	-.02	.08	.03	.11	.03	-.01	-.02	.10
Assets per adult	.28**	-.06	-.04	.15	.17*	-.09	.27**	-.08	.00	-.04	-.16	.19*	.19*
Gender (male)	.12	.02	-.17	.13	.10	.06	.29*	-.04	-.07	.04	-.02	-.03	.20*
Age of respondent	-.02	.12	.00	.01	-.08	.09	.05	.06	.08	.08	-.07	-.06	.16
Education level	.05	-.04	.10	.01	-.01	.04	-.04	.12	.13	.13	.01	.14	.05
Number of people in household	.04	-.17*	-.05	.04	-.09	-.09	-.03	-.07	-.12	-.12	.05	.11	-.14
Babies (5 and under) in household	.06	-.04	-.01	.08	.14	-.07	.10	.05	.07	.07	.05	.20	-.10
Children (6-15) in household	-.03	-.13	-.03	.03	-.04	-.07	-.08	.04	.00	.00	.13	.04	-.10
Young adults (16-24) in household	-.06	-.06	.05	.02	-.12	.01	-.07	.02	-.02	-.02	.07	.08	-.04
Adults (25-59) in household	.06	-.14	.05	-.11	-.13	-.02	-.09	-.04	-.08	-.08	.00	-.11	-.11
60 - 74 year olds in household	.03	.08	-.07	.03	.05	-.01	.12	-.02	-.09	-.09	-.03	-.03	.12
75 and older in household	-.15	.16	.07	.11	.03	.08	-.02	.12	.19	.19	.11	.12	.03

Table 7.9 Inter-relationships between socio-demographic variables

	Income per adult	Assets per adult	Gender (male)	Age of respondent	Education level	Number of people in household	Babies (5 and under) in household	Children (6- 15) in household	Young adults (16- 24) in household	Adults (25- 59) in household	60 - 74 year olds in household	75 and older in household
Socio-demographics												
Income per adult	1.00											
Assets per adult	.43**	1.00										
Gender (male)	.05	.12	1.00									
Age of respondent	-.16	.02	.40*	1.00								
Education level	-.02	.01	-.16	-.05	1.00							
Number of people in household	.05	-.02	-.21*	-.45**	.13	1.00						
Babies (5 and under) in household	.10	-.03	-.20*	-.45**	.20*	.34**	1.00					
Children (6-15) in household	.01	-.08	-.11	-.37**	.01	.62**	.16	1.00				
Young adults (16-24) in household	.28**	.12	-.21*	-.27**	-.11	.40**	-.03	.04	1.00			
Adults (25-59) in household	-.09	-.20*	-.28*	-.44**	.04	.53**	.16	.31**	.22*	1.00		
60 - 74 year olds in household	-.17	.14	.35*	.58**	.07	-.40**	-.23*	-.33**	-.32**	-.63**	1.00	
75 and older in household	-.24*	-.15	.15	.28**	.03	-.22*	-.11	-.15	-.14	-.24*	-.011	1.00

7.5.3.1 Relationships with aggregate energy use

As Table 7.8 illustrates, of the psychological variables, only the affluent identity at an aggregate level had a direct relationship with actual energy use ($r_t=.16$, $p<.05$). Although this relationship is weak, considering the psychological nature of the construct and the use of the more discerning Kendall's Tau, the finding is still a notable one. This suggests that the extent to which someone's sense of self is tied to being financially successful and how this is in turn tied to ESC is potentially central to reducing the impact of consumption. The lack of relationship between biospheric values, altruistic values and energy consumption indicates a value-action gap exists for the HH surveyed. There was only a slightly negative correlation between biosphericism and energy use ($r_t=-.05$). The reasons behind the positive relationship with altruism will be explored further in the consumption category level energy use analysis below (Section 7.5.4). Figures 7.11 and 7.12 map the mean of biosphericism and altruism and aggregate energy and demonstrates the lack of significant relationships. The regression line is almost flat in both cases. Calculated z-scores based on skewness and kurtosis indicate the altruistic scores are normally distributed, but there is a significant kurtosis of the biospheric scores ($z=1.98$, $p<.05$), meaning a strong clustering of many scores.

Figure 7.10 Biospheric values and aggregate energy use scatter graph

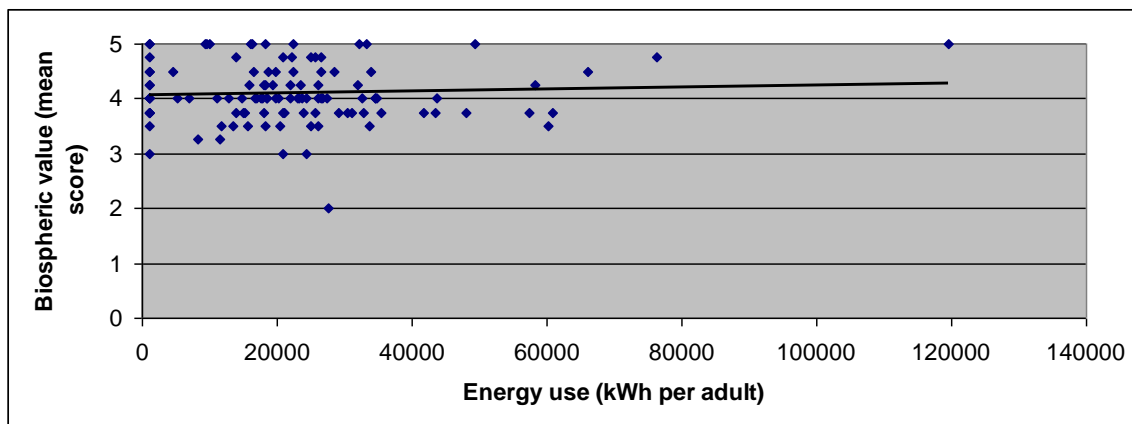
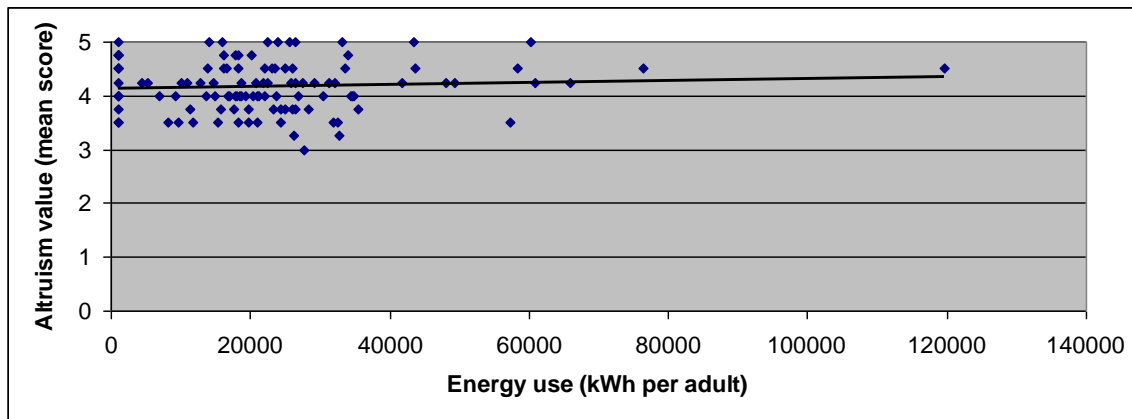


Figure 7.11 Altruistic values and aggregate energy use scatter graph



As is expected, income was shown to have a moderate and highly significant relationship with energy use ($r_t=.30$, $p<.01$). However, assets had a similar relationship ($r_t=.28$, $p<.01$) and whereas there were no psychological variables that had a relationship with income, a number of psychological variables had a relationship with assets. Assets were moderately and positively connected to a sense of affluent identity ($r_t=.27$, $p<.01$) and more weakly to a materialistic orientation ($r_t=.17$, $p<.05$), both of which could be considered self-enhancement orientations. Although the affluent identity and materialism were weakly related to energy use this relationship was not significant at the $<.05$ level.

Assets had a small correlation with an identity conflict ($U = 662.5$, $z = -1.99$, $r = .19$, $p < .05$) and a values conflict ($U = 951$, $z = -1.96$, $r = .19$, $p < .05$). As income and assets were also highly positively correlated ($r_t=.43$, $p < .01$) a partial correlation analysis was performed to see how much variance was shared in respect to aggregate energy use. When the relationship between assets and aggregate energy use was calculated, with income held constant, the effect size was reduced from 8% ($r=.28$, $p<.01$) to 5% ($r=.23$, $p<.05$) whereas when the relationship between income and energy use was calculated with assets held constant the effect of income was reduced by much more, from 9% ($r=.30$, $p<.01$) 1.4% and not significant ($r=.12$, ns). This indicates that for the ESC categories considered, assets are still important when its shared relationship with income is considered.

However, income's effect is reduced substantially when assets are controlled for. The results suggest there is a relationship between the long term ownership of money (assets) and the psychology of its owners, which may influence energy use, and that the affluent identity, and to a lesser extent materialism, are important in understanding this.

7.5.3.2 Relationships between socio-demographic and psychological variables

Males were significantly more likely to hold an affluent identity than females ($U = 961$, $z = -2.97$, $r = .28$, $p < .01$) and were also more likely to experience an identity conflict, where both an affluent and an environmental identity are held ($r_{\phi} = .20$, $p < .05$). Materialism was not related to any of the socio-demographic variables (other than assets as discussed above). The only other socio-demographic relationship with the psychological variables was a weak negative relationship between the larger households and biosphericism of the respondent householder. This is interesting because larger households tend to be represented by younger ($r_{\tau} = .45$, $p < .01$) female respondents ($r_{\tau} = .21$, $p < .05$), although neither of these variables is directly related to biosphericism. A values conflict was also weakly positively related with the number of babies in a household ($U = 1201$, $z = -2.10$, $r = .20$, $p < .05$) - an interesting insight that requires further analysis to understand as babies were not significantly related to any other variable.

The large number of consistent and significant relationships between socio-demographic data indicated something about the structure of the households of the survey respondents. The results show that larger, younger (under the age of 59) households tend to be represented by female respondents. Additionally, the previous section revealed that these larger households are more likely to have biospheric values. Respondents with more householders between the ages of 60 and 74 were particularly likely to be males ($U = 901$, $z = -3.57$, $r = .35$, $p < .05$) and much more likely to be older ($r_{\tau} = .58$, $p < .01$).

7.5.3.3 Summary of aggregate energy use analysis

In summary a number of conclusions can be drawn from the bivariate aggregate energy analysis, the implications of which will be more fully explored in Chapter Eight:

- The affluent identity was the only psychological variable correlated to energy use
- Assets appear to be more significant to aggregate energy use than income when their shared variance is considered.
- A value-action gap appears to be present for the respondents as a whole, as there is no significant negative correlation between biosphericism and energy use or altruism and energy use, where there is in fact a slightly positive relationship.
- The fact that only variables connected to wealth have a direct relationship with actual energy use underlines the importance of considering the role of wealth and energy use. Additionally, the lack of other influencers supports the position that antecedents to behaviour are complex and that it is useful to consider derived relationships, in the case of this study, what might indirectly influence energy use through an influence on the relationship between wealth and energy use.
- Assets have a very similar (moderate, positive and highly significant) relationship with energy use as income. However, whereas no psychological variables correlate with income, both the affluent identity and materialism are related to assets - the affluent identity particularly strongly and significantly. This means the affluent identity and materialism are likely to be important variables in understanding how wealth relates to energy use in a psycho-socio-cultural way.
- The psychological relationships with assets that were found indicates that assets may be a better foundational way to understand the psychological antecedents to how wealth structures energy consumption, than income. For example, the fact that assets are related to an affluent identity, but income is not, raises important questions such as: Is it the fact that assets are more stable, compared to income which is often more variable, which affects the

sense of identity in terms of being financially successful? Extending this, there may be a cultural or lifestyle influence connected to hereditary assets that forms a sense of affluence at a deeper level, compared to income which may be less fundamentally embedded in the sense of self. Because assets and the affluent identity are rarely included in sustainable consumption studies this finding offers some potentially useful areas for future research and for further understanding the nature of environmentally impactful consumption.

7.5.4 Relationships between psychological and socio-demographic variables and energy use within behavioural categories

The data above indicate relationships with energy consumption at an aggregate level. This section analyses the correlations between variables at a consumption behaviour category level, in order to understand if there are relationships which might be masked by the aggregation of the different consumption practices (kWh per adult for long-distance leisure flights, European leisure flights, energy from car use and household fuel consumption).

7.5.4.1 The importance of the consumption category

As well as energy consumption information about long-distance holidays, European holidays, car choice and new durable products, the research was designed to gather further detail on these specific categories of high-energy consumption behaviour. Particularly, data were gathered on how important each category was when allocating the household budget and what the desired level of consumption would be if all constraints were removed (as outlined in Chapter Five and analysed in detail by category in this chapter).

As outlined in Table 7.10, in terms of importance, European holidays and car choice are seen as more important than long-distance holidays and buying new products. European holidays appear the most important for the sample, with 41% seeing them as important and 10% seeing them as extremely important. The most frequent response was 'important' with the mean of responses being 3.32. With

similar statistics, car choice was the next most important category. It also had a mean average above neutral (3.21) and a mode of 'important', with slightly less people seeing it as important or extremely unimportant (46%). A large proportion of respondents thought long-distance holidays were not important (42%). However, people's opinions were widely split on the subject with 29% seeing them as important. New products were seen as less important than the other categories. A similar number thought they were unimportant or extremely unimportant (28%) as important or extremely important (27%) with most people being neutral on the subject.

Table 7.10 Importance of ESC categories to respondents

	n =	Extremely unimportant (1)	Unimportant (2)	Neutral (3)	Important (4)	Extremely important (5)	Unimportant (1 or 2)	Neutral (3)	Important (4 or 5)	Mode	Median	Mean
Long distance holidays	108	17%	25%	30%	21%	7%	42%	30%	29%	3	3	2.78
European holidays	108	8%	12%	29%	41%	10%	20%	29%	51%	4	4	3.32
Having the car of choice	109	11%	13%	30%	36%	10%	24%	30%	46%	4	3	3.21
Buying new products	108	9%	19%	45%	24%	3%	28%	45%	27%	3	3	2.93

Tables 7.11, 7.12 and 7.13 detail the relationships between the variables. As previously, all correlations are Kendall's Tau coefficients except for gender, value conflict, identity conflict, environmental protection concern, climate change concern and energy related issues concern, all of which are dichotomous variables and therefore Mann Whitney U-tests of independent samples have been used. Where a variables data are inter-related, the correlation coefficient and significance have been reported but not highlighted in grey.

Table 7.11 Category level energy consumption and psychological variables relationships

	Biospheric values	Altruistic values	Egoistic values	Materialism	Environment-alist Identity	Affluent Identity	Environmental Concern (aggregate)	Environmental protection concern	Climate change concern	Energy related issues concern	Value conflict	Identity conflict
Category level energy use and consumption												
Long distance leisure flights (kWh per adult)	-.07	.17*	.10	-.03	-.05	-.01	-.15	.00	-.13	-.01	.01	.01
European leisure flights (kWh per adult)	-.05	-.07	-.03	.02	-.14	-.02	-.16	.01	-.04	.00	-.09	-.02
Car energy use (kWh per adult)	-.04	.07	.07	.10	-.04	.08	-.07	-.09	-.07	.09	.11	-.04
Fuel use in the home (kWh per adult)	-.04	.02	.02	-.04	.15*	.10	.07	.09	.06	-.09	.18	.18
Product consumption per adult	-.01	.06	.08	.13	-.07	.17*	-.05	.04	-.03	-.04	.15	.04
Ideal energy use												
Ideal number of long distance holidays	.01	.06	.02	.10	-.04	-.02	.01	-.02	-.03	.02	-.06	.06
Ideal number of European holidays	.01	.01	-.03	.16	.03	-.10	-.06	-.09	-.03	-.09	-.06	.10
Power of ideal car compared to current	-.01	-.03	.11	-.04	.02	.09	.06	-.01	.14	.01	.05	-.06
Ideal number of new products bought	-.05	.04	.10	.23**	-.06	.11	-.14	-.09	-.10	-.09	.18	.00
Importance of consumption												
Importance of long distance holidays	-.15	.06	.08	.06	-.17*	.05	-.11	.02	-.02	-.02	.07	-.10
Importance of European holidays	-.14	-.08	.07	.11	-.08	.07	.05	.03	.15	-.03	.08	.00
Importance of having the car of choice	.01	-.11	.12	.13	-.20**	.10	-.08	-.19	-.02	-.19	.14	-.05
Importance of buying new products	-.03	-.02	.24**	.26**	-.10	.29**	-.06	-.17	-.11	.17	.21*	.01

Table 7.12 Inter-relationships between category level energy consumption variables

	Energy use aggregate (kWh per adult)	Long distance leisure flights (kWh per adult)	European leisure flights (kWh per adult)	Energy from cars (kWh per adult)	Fuel use in the home (kWh per adult)	Product consumption per adult	Ideal number of long distance holidays	Ideal number of European holidays	Power of ideal car compared to current	Ideal number of new durable products bought	Importance of long distance holidays	Importance of European holidays	Importance of car choice	Importance of buying new products
Category level energy use and consumption														
Long distance leisure flights (kWh per adult)	.21**	1.00												
European leisure flights (kWh per adult)	.10	.20*	1.00											
Car energy use (kWh per adult)	.40**	-.03	-.03	1.00										
Fuel use in the home (kWh per adult)	.53**	-.06	-.06	.10*	1.00									
Product consumption per adult	.16*	-.06	.02	.25**	.25**	1.00								
Ideal energy use														
Ideal number of long distance holidays	.16	.36**	.15	-.11	-.19	-.13	1.00							
Ideal number of European holidays	.05	.07	.17	-.02	-.17	.09	.31**	1.00						
Power of ideal car compared to current	.02	-.01	-.01	-.01	.16	-.04	.12	-.05	1.00					
Ideal number of products bought	.11	-.14	-.01	.19**	.09	.63**	-.04	.18*	.01	1.00				
Importance of consumption														
Importance of long distance holidays	.28**	.49**	.15	.05	-.04	.04	.18	.03	.06	-.01	1.00			
Importance of European holidays	.11	.10	.23**	.03	-.09	.09	.04	.31**	.08	.07	.42**	1.00		
Importance of car choice	.04	.00	.02	.04	-.11	.09	-.04	.03	.05	-.02	.09	.08	1.00	
Importance of buying new products	.04	-.07	-.09	.12	-.07	.06	-.06	-.03	.05	.10	.11	.16	.32**	1.00

Table 7.13 Category level energy consumption and socio-demographic variable relationships

	Income per adult	Assets per adult	Gender (male)	Age of respondent	Education level	Number of people in household	Babies (5 and under) in household	Children (6-15) in household	Young adults (16-24) in household	Adults (25-59) in household	60 - 74 year olds in household	75 and older in household
Category level energy use and consumption												
Long distance leisure flights (kWh per adult)	.12	.11	.05	.24**	-.06	-.22**	-.21*	-.26**	-.09	-.08	.22*	-.08
European leisure flights (kWh per adult)	.04	.10	.15	.17*	-.20*	-.10	-.21*	-.09	.03	-.11	.19*	-.13
Energy from cars (kWh per adult)	.30**	.23**	-.01	-.26**	.17*	.15*	.14	.12	.11	.10	-.21**	-.18*
Household fuel use (kWh per adult)	.23**	.19*	.06	-.04	-.03	-.05	-.08	.05	.05	-.10	-.03	-.01
Product consumption per adult	.37**	.22**	-.05	-.32**	-.04	.16*	.24**	.14	.26**	.10	-.30**	-.09
Ideal energy use												
Ideal number of long distance holidays	-.16	-.10	.15	.02	-.16	-.06	-.03	.05	-.17	-.06	.17	-.01
Ideal number of European holidays	.01	-.05	.00	-.04	-.02	-.03	.00	-.14	.06	.10	-.08	.01
Power of ideal car compared to current	.00	.04	.14	.04	-.24**	.07	-.05	.11	.05	.04	-.08	.01
Ideal number of products bought	.15	.14	-.13	-.53**	-.05	.36**	.30**	.21*	.30**	.33**	-.41**	-.19*
Importance of consumption												
Importance of long distance holidays	.11	.10	.07	.12	-.07	-.20*	-.04	-.22*	-.12	-.08	.12	-.07
Importance of European holidays	.07	.07	.16	.04	.10	-.07	.03	-.19*	.06	-.09	.05	.09
Importance of having the car of choice	.04	.16*	.16	.12	.04	.02	-.06	-.07	-.03	-.07	.11	.07
Importance of buying new products	-.03	.16*	.08	-.05	-.01	.01	.07	-.03	.06	-.08	.01	.06

7.5.4.2 The relationships between the categories and the role of wealth

The data indicate that there is a split between leisure flights on the one hand and cars and products on the other - in terms of their actual consumption. The consumption from European leisure flights is correlated positively with the energy used from long-distance flights ($r_t=.20$, $p<.05$), whereas the number of products consumed is linked to energy from cars ($r_t=.25$, $p<.01$). This suggests that the sample is divided, in some respects, to those who tend to consume cars and products, and those that tend to consume holidays.

The category level analysis also reveals that income and assets do not have a relationship with energy use from long-distance or European leisure flights, but instead their influence, at the aggregate level, comes primarily as a result of their relationship with energy from cars ($r_t=.30$, $p<.01$ and $r_t=.23$, $p<.01$ respectively) and household fuel (income $r_t=.23$, $p<.01$, assets $r_t=.19$, $p<.05$).

Although product consumption did not form part of the aggregate energy analysis, the results show that there is also a significant relationship between products bought and both income and assets ($r_t=.37$, $p<.01$ and $r_t=.22$, $p<.01$ respectively). Additionally, there is a small correlation between assets and the importance of cars and products (both ($r_t=.16$, $p<.05$)).

The fact that income and assets related to all ESC categories, except leisure flights, is interesting because it reinforces the notion that leisure flights are fundamentally different to the other forms of consumption, in terms of what shapes their consumption. Additionally, it suggests that although, in the general population, income is shown to be significantly related to the number of flights taken (as discussed in Chapter Three), when only HIH are considered, the level of wealth (income or assets) may not have a significant influence, and other factors are more important. Fuel use will not be considered any further in this thesis as it is not a key

category under consideration. However, it is interesting to note that the environmentalist identity has a positive relationship to fuel use per adult, this suggests that despite the large amount of symbolic connection between the environment and home energy created by the government and NGOs, this does not appear to have been effective for this sample of HH.

7.5.4.3 Leisure flights

Long-distance leisure flights are a particularly environmentally impactful consumption practice, as outlined in Chapter Three. The correlations detailed in Table 7.12, reveal that the level of importance placed on them is in direct relation to aggregate energy use ($r_t=.16$, $p<.01$). Interestingly, the data show that levels of altruism have a positive correlation with long-distance leisure flights ($r_t=.17$, $p<.05$). This is contrary to expectation and reveals potentially important insights about the dynamics of values, as they relate to particularly high-energy consumption practices. Altruism was found to be positively connected to the environmentalist identity. However, these variables appear to be acting independently as the environmentalist identity has a slight negative relationship with actual long-distance leisure flights ($r_t= -.05$).

Although there is a statistical relationship between altruism and long-distance leisure flights, altruism is not related to the ideal number of long-distance holidays or how important those holidays are seen as being for the household (Table 7.11). No other psychological variable has a positive influence on leisure flights: actual, ideal or in terms of their importance. This is not in line with the expectation that materialism and egoism would exert a positive influence. Potentially, because holidays are more experiential in nature, they may not be subject to the same psychological influences as physical goods, which is how materialism particularly tends to be conceptualised. This is somewhat reinforced by the influence that materialism has on ideal product consumption and its importance, which will be discussed in Section 7.5.4.4 below.

Holding an environmentalist identity relates negatively to the perceived importance of long-distance holidays ($r_t = -.17$, $p < .05$) and although biosphericism is negatively related to the importance of long-distance and European holidays, this is not significant. Long-distance holidays are known for their high-energy impact, and have been popularly discussed in such ways in the mainstream media so that these results are consistent with expectations (Hall, 2005). However, stronger relationships would have been expected, and the fact that neither the environmentalist identity or biosphericism relates to actual consumption, further confirms that there is a value-action gap for respondents. The results indicate that the consumption practice of taking leisure flights is a result of conscious preference for such behaviour, as there is a strong correlation between the energy use from long-distance holidays and a higher ideal number of long-distance holidays ($r_t = .36$, $p < .01$) and the importance of those holidays ($r_t = .49$, $p < .01$). This is replicated, to a lesser extent, with the relationship between actual European leisure flights and the importance placed on those European holidays ($r_t = .28$, $p < .01$), but not the ideal number. There is also a small, positive, correlation between long-distance leisure flights and for European leisure flights ($r_t = .20$, $p < .05$), although the small correlation indicates that what drives the one type of holiday does not, in most cases, drive the other type.

The socio-demographic analysis is particularly useful at indicating what might be shaping the consumption of leisure flights. Older respondents ($r_t = .24$, $p < .01$), smaller households ($r_t = .22$, $p < .01$) and households with a larger number of 60-74 year olds ($r_t = .22$, $p < .05$) all have significant positive correlations with long-distance leisure flights. These types of households are not more likely to be altruistic, as Table 7.9 shows, meaning that altruism has a relationship with long-distance leisure flights likely to be independent of these socio-demographics.

At the same time, households with more babies ($r_t = -.21$, $p < .05$), and children ($r_t = -.26$, $p < .01$) are significantly less likely to take long-distance leisure flights and

again there is no altruistic relationship explaining this. The number of babies also significantly relates to the number of European holidays taken ($r_t = -.21$, $p < .05$) and older respondents ($r_t = .17$, $p < .05$) and respondents with higher number of 60-75 year olds ($r_t = .19$, $p < .05$) are more likely to take European holidays. These results indicate that, for the sample, life stage appears to be an important factor in promoting or inhibiting energy use from leisure flights. The impact of life stage also translates to the importance placed on both long-distance and European holidays for those with more children in their household ($r_t = -.22$, $p < .05$), ($r_t = -.19$, $p < .05$), although there is no correlation with babies. Interestingly, the number of European leisure flights taken is slightly, but significantly, positively related to those with lower education levels ($r_t = .20$, $p < .01$). This is not an income related factor as there was no relationship between income and education level (see Table 7.10). An analysis of the relationships between variables and products and cars further reinforces the difference between these and leisure flights.

7.5.4.4 Products

Within the sample, whereas leisure flights are consumed by older, smaller households with more 60-75 year olds, in contrast, new durable products (per adult) are more likely to be consumed in greater quantities by younger respondents with larger households with more babies and young adults and significantly less by 60-74 year olds. It seems, however, that there is a constrained urge for even more new durable products, because these socio-demographic dynamics are translated more strongly in terms of ideal level of consumption. There is a highly significant negative relationship with the age of respondent in terms of how many new durable products they consume ($r_t = -.32$, $p < 0.1$), but, even more significantly, in terms of what they want to consume ($r_t = -.53$, $p < .01$), meaning younger respondents do, and want to, consume much more than older respondents.

As we have seen, these younger respondents are more likely to represent larger households with more children, and this is reflected in the product category with larger households ($r_t = .36$, $p < .01$), households with more babies ($r_t = .30$, $p < .01$)

and more children ($r_t=.21$, $p<.05$), all wanting to consume more products, even though they already consume more than other respondents.

Additionally, households with more young adults ($r_t=.30$, $p<.01$) and adults ($r_t=.33$, $p<.01$) also want to consume more. Furthermore, the negative correlation between products and households with more 60-74 year olds persists when ideal consumption is considered ($r_t= -.41$, $p<.01$) and to a lesser extent with the over 75s ($r_t= -.19$, $p<.05$). As such, the energy impact of the higher-income 60-74 year old households appears to be quite specific. They are frugal when it comes to actual and ideal consumption of material goods, possibly due to their upbringing in a post-war age of austerity or possibly due to the prior accumulation of goods, but are more likely to consume long-distance leisure flights. This relationship does not appear to be directly mediated by any self-enhancing or self-transcending value or identity orientation, as the number of 60-74 year olds is not significantly related to any of these variables (see Table 7.9). The strongest relationship with a desire for more products is current product consumption ($r_t=.63$, $p<.01$), which seems to provide support for the view that consumerism is pathological.

In terms of psychological variables, the importance of new durable products is significantly positively correlated to all the self-enhancing orientations in terms of the importance of these products when allocating the household budget (egoism: $r_t=.24$, $p<.01$, materialism $r_t=.26$, $p<.01$, affluent identity: $r_t=.29$, $p<.01$). In terms of their actual consumption or ideal consumption, only the affluent identity has a significant relationship with actual product consumption ($r_t=.17$, $p<.05$), whereas materialism is the only variable to effect the desire to buy more ($r_t=.23$, $p<.01$).

As the three self-enhancing orientations have a correlation with the importance of product consumption, and yet all these are themselves correlated, it is useful to investigate to what extent they exert an independent influence. As explained

previously, as the data are non-parametric, partial correlation analysis techniques are not possible, however, performing a standard partial correlation using Pearson coefficients in SPSS is a useful exercise to obtain a general understanding of the extent of diminished effect, even if the coefficients themselves cannot be used. The results of this analysis are detailed in Table 7.14

Table 7.14 Importance of buying products: Partial correlations for self-enhancement orientations

	Importance of buying new durable products. Original r (Pearson)		r when materialism held constant		r when affluent identity held constant		r when egoism held constant		r when materialism and egoism held constant		r when affluent identity and egoism held constant		r when materialism and affluent identity held constant	
	r	r ²	r	r ²	r	r ²	r	r ²	r	r ²	r	r ²	r	r ²
Affluent identity	.33**	11%	.23*	5%	-		.31**	10%	.24*	6%				
Materialism	.33**	11%	-		.24*	6%	.27**	7%			.20*	4%		
Egoism	.23*	5%	.11	1%	.22*	5%	-						.10	1%

Partial correlation analysis shows that (for the perceived importance of products) materialism and the affluent identity still have a significant relationship when the other self-enhancement orientations are kept constant. Egoism, however, is reduced from an already weak relationship, to no relationship. The detail of the analysis shows that this is primarily because of shared variance with materialism. Only a small amount of variance is shared with the affluent identity. Furthermore, it appears that around half of the relationship with product importance is shared between materialism and the affluent identity. This indicates that for this variable, egoism and materialism are related to the extent that egoism is rendered insignificant, and materialism and the affluent identity are related, but not to the extent that either of their relationships with product importance is insignificant.

7.5.4.5 Cars

As with product consumption, car energy impact is also positively related to younger respondents and those with more people in their households, but negatively to those with more people from the ages of 60 upwards (Table 7.13). A logical hypothesis would be that younger families need to drive more due to commuting and responsibilities to transport children and that therefore this may not be related to the power of the car. In order to test this, two new variables were created, one based on the total household mileage across all cars divided by the number of adults in the household and the other the average CO₂ for all cars in the

household. Correlational analysis of this and all socio-demographic variables showed that mileage is positively related to younger respondents ($r_t=.25$, $p<.01$), negatively related to those households with more 60-75 year olds ($r_t=-.21$, $p<.01$), and over 75's ($r_t=.18$, $p<.05$), and also positively related to both income ($r_t=.32$, $p<.01$), and assets ($r_t=.21$, $p<.01$). CO₂ on the other hand were not significant related to any variable. This suggests that it is the usage rather than the choice of car that is most important in terms of the age of respondents. However, it seems that both aspects are likely to result in the relationship between large families and car energy use.

In respect to the psychological variables, the environmentalist identity has a small, but significant, negative relationship with the importance of car choice when allocating the household budget ($r_t=-.17$, $p<.01$). This is another example where the sense of being an environmentalist had more effect on the perceived importance of a high-energy consumption practice (the other being long-distance holidays), where other pro-environmental psychological constructs have not. Notably, although the desirability of higher-powered cars is significantly negatively related to higher education levels ($r_t=-.24$, $p<.01$), in terms of actual energy consumption from cars, those with higher education levels consume more ($r_t=.17$, $p<.01$). As all people in the sample are from HH, the chance that this difference is because of business use, that may arise from jobs requiring use of a car, which also require higher education levels, is diminished. Analysis of the occupations of respondents against their education levels and car use showed that a chef, health visitor and prison officer had amongst the highest levels of car use but did not have higher than vocational qualifications.

7.5.4.6 The value-action gap

The data reveal a value-action gap for all the ESC categories, with no negative relationships between self-transcending values and energy consumption. The only relationship between values and action is the unexpected positive relationship between altruism and long-distance holidays.

7.5.4.7 Summary of category level energy use analysis

- There are no negative statistical relationships between self-transcending orientations and energy use at the category level, suggesting that a value-action gap exists at this level, as well as at the aggregate level.
- There is a noticeable distinction between those who take leisure flights on the one hand and cars and products on the other, and what underlies their consumption.
- Those who take more long-distance leisure flights are also significantly more likely to take more European leisure flights and surprisingly, these leisure flights do not have a relationship with either income or assets. This is an interesting result that suggests that holidays by air may be an inelastic good that money is put aside for, regardless of actual wealth, particularly by 60-75 year olds.
- Altruism is positively connected with taking more long-distance holidays. None of the self-transcending values negatively affects their actual consumption, although the environmentalist identity is negatively related to how important long-distance holidays are.
- Socio-demographic factors also show themselves to be important in shaping energy consumption at a category level as there is a split between type of household, in terms of leisure flights and products. 60-75 year olds and smaller households are more likely to take long-distance holidays. However, both type of leisure flights are less likely to be taken by households with more babies and children. These larger, younger families represented by younger respondents do however consume significantly more products, and have a significantly greater desire to consume more products, along with households of every range, except 60-75 year olds, who although more likely to consume leisure flights are less likely to consume more products, or want to. The amount of products desired and the desire for more products is highly related to age, meaning that it is important to understand what is causing a barrier to this increased energy consumption.
- The affluent identity is the only psychological variable related to a higher consumption of products. Materialism, on the other hand, is significantly

positively correlated to the ideal number of products bought and the importance of product consumption and egoism is positively related to the importance of products.

- Car energy use is the most significant contributor to overall energy consumption of the categories measured. It is related to younger, larger households, with mileage, rather than engine size, most significant for younger respondents. The desire for a higher-powered car is related to those with lower level of education, whereas the actual energy consumption from cars is related to those with higher education levels. Those with a higher sense of environmentalist identity are less likely to see car choice as important.
- It appears that the self-transcending value orientations have little effect on any of the variables considered, at a category level. The self-enhancing orientations and identity measures offer more insight. It is notable that materialism affects ideal product consumption and its importance (but not actual consumption), but does not influence any other category. The Richins and Dawson's Materialism Scale is defined in terms of physical products and specifically draws attention to cars and clothes, which, perhaps, explains why materialism as tested here does not explain leisure flights, which are more experiential in nature. However it would be reasonable to assume materialism would have been related to car consumption, but it is not.
- The importance of including a measure of environmental and affluent identity is confirmed at the category level, as they are significantly related to energy use (affluent identity), and certain factors that shape energy use (environmentalist identity), whereas other variables are not.
- The relationship between perceived importance of long-distance holidays is interesting, but not unexpected, given that actual long-distance holidays were part of the energy use calculations and a relationship between actual holidays taken and importance of those holidays is logical ($r_t = .49$, $p < .01$). However, as outlined in Chapter Three, long-distance holidays are a extremely energy heavy consumption practice, with average long-distance

flights using the same energy, or CO₂, as the estimated sustainable total CO₂ emissions per capita (Carbon Independent 2010), or the annual electricity consumption of an average three person Californian household (Silverman 2007), and therefore it is likely that even if the full range of consumption category variables were included in the energy calculations, long-distance holidays would still form a significant influence over energy use.

As a result of Section 1, a number of questions arise. Where the data exists, these will be considered in Section 2 of this chapter:

Leisure flights

1. For those with altruistic values, what drives their desire for long-distance holidays?
2. For those with people in the household between the ages of 60 and 74, what is driving their demand for long-distance holidays and European holidays?

Cars

3. How do the drivers of car consumption relate to younger respondents and education levels and does this indicate anything specifically about what drives those with higher education levels to have higher energy consumption?
4. What constrains people with less education having their ideal car (and therefore constraining their desire for higher-powered cars)?

Products

5. What drives the consumption of new durable products by younger respondents and what are their perspectives on second-hand products?
6. What is different about the (low) need satisfaction provided by products for 60-74 year old compared to all other age groups?
7. What constrains younger respondents, and larger younger households, from buying even more products?

7.6 SECTION 2 – Drivers of high-energy use and constraints to higher energy consumption by higher-income householders

Section 2 will present the analysis of the questionnaire data of drivers and constraints to ESC. For the driver analysis, only those people who could be considered to consume in an environmentally significant way are assessed, and for the constraint analysis, only those who desire greater consumption are considered. This results in varying sample sizes, depending on the category and analysis. Although this approach resulted in varying reduced sample sizes, which will be reported below, as a result, the data are highly specific to the question of what drives HIH to ESC or what is constraining ESC.

The section is divided into three parts covering the drivers and barriers for each consumption category, beginning with leisure flights (long-distance and European) and moving to large-engine cars and then new durable products. For each category, the data on drivers and constraints are analysed, including an outline of the sample rationalisation that occurred prior to analysis and an assessment of the reliability of the theoretical functional, experiential and relational needs satisfier groupings or scale reliability. In the case of each consumption category the psychological socio-demographic and behavioural variables are correlated in relation to the drivers and barriers of consumption.

7.6.1 Drivers of long-distance and European leisure flights

7.6.1.1 Category reliability and sample rationalisation

7.6.1.1.1 Category reliability

Emanating from the results of the qualitative analysis and literature review, the consumption drivers were grouped into three, broad, need satisfier categories of experiential, functional and relational (as detailed in Chapter Three) to help

structure item development. In order to assess if these need categories were valid for analysis, Cronbach's Alphas (α) were produced for each set of items in each category to assess internal consistency. Out of the full sample of 110, only 98 respondents answered the questions fully and therefore were deemed valid by the test. The results presented in Table 7.16 show that the experiential category has good reliability with Alpha's above .7. It also indicates that no items' removal would cause a large improvement in reliability.

For the functional category, removing 'to pursue my hobbies' would create a large improvement in the functional category Alpha, from .708 to .811. The relational category did not produce an alpha above .7. On initial analysis it would seem no one items removal would improve the alpha above .7. However, when the two items that would create the most improvement were removed ('because I can afford it' and 'to spend time with people close to me'), the Alpha increased to .762. Analysis of the data in Table 7.15, however, indicates that what separates the two items that were removed from the rest is that they were both deemed important to respondents, whereas, the other relational items were not. This, along with the fact that the need categories were created as an aid to exploration, rather than a replacement for item level analysis, means that these two items, along with, 'to pursue my hobbies', were annexed from the categories, rather than excluded.

Table 7.15 Category reliability of holiday drivers

Cronbach's α	.781	Cronbach's α	.708	Cronbach's α	.628	Cronbach's α	.762
Experiential (n=98)	Cronbach's α if item deleted	Functional (n=98)	Cronbach's α if item deleted	Relational complete (n=93)	Cronbach's α if item deleted	Relational revised (n=93)	Cronbach's α if item deleted
To experience a different lifestyle	.751	To alleviate the pressure that builds up in my life	.529	Because I can afford it	.655	To provide something interesting to share with friends	.688
To find out about how other people live	.749	To relax	.525	To spend time with people close to me	.678	To interact with new people	.724
To make me feel free	.749	To take me away from the routine of life	.645	To provide something interesting to share with friends	.533	To find out about myself	.717
To be in sunny weather	.782	To pursue my hobbies	.811	To interact with new people	.569	To interact with people who are similar to me	.696
To be in beautiful surroundings	.735			To interact with people who are similar to me	.532		
To provide stimulating experiences	.771			To find out about myself	.499		
To give me something exciting to look forward to	.733						

7.6.1.1.2 Sample rationalisation

Those who did not take any leisure flights (n= 28) were removed from the full sample of (n=110). This left a sample of 82 representing those HIH who took either long-distance or European leisure flights on a yearly basis, which was the large majority (75%).

7.6.1.1.3 Between group analysis

In order to understand if there were any significant differences between those who did not consume leisure flights on an annual basis, and those that did, an exact Mann Whitney U-test was performed to compare the two groups on psychological, socio-demographic and behavioural variables. The results revealed that the group who did not take leisure flights had households with significantly higher numbers of children between the ages of 6 and 15 ($U=844$, $z=-2.04$, $r=.21$, $p<.05$), significantly higher number of 75 year olds ($U=945$, $z=-2.05$, $r=.20$, $p<.05$) as well as a significantly higher levels of environmentalist identity ($U=854$, $z=-2.04$, $r=.20$,

$p < .05$) and energy concern ($U=932$, $z=-2.43$, $r=.23$, $p < .05$). This indicates that having children, being very elderly, being concerned about energy issues or having an environmental identity reduce the taking of leisure flights for the sample, and none of the other variables has a significant impact. The lack of relationship with other variables suggests that the group who wanted to take more leisure flights had similar high levels of biosphericism as the main sample. Frequency analysis (Table 7.16) confirmed the high levels of value orientation in these areas, as well as low materialistic values.

Table 7.16 Psychological frequency analysis of those who take leisure flights

	Biospheric values	Altruistic values	Environmental identity	Environmental concern	Egoistic values	Materialism	Affluent identity
n =	81	81	82	82	79	78	81
Missing	1	1	0	0	3	4	1
Mean	4.08	4.20	2.97	0.45	3.05	2.43	3.15
Median	4.00	4.30	3.00	0	3.00	2.43	3.20
Mode	4.0	4.0	3.0	0.0	2.6	2.65	3.0

The fact that income or assets were not different between the groups, underlines the findings from Section 1, that wealth is not a significant factor in influencing whether a household takes leisure flights or not. A Kruskal-Wallis test was also performed to see if there was any significant difference between the three original geographic samples. No significant differences were found.

7.6.1.2 Descriptive analysis

As outlined, in detail, in Chapter Five, holiday drivers were assessed through Likert-type items. All items were preceded with the question:

“How important are each of the following factors in motivating you to take holidays **and** which type of holiday (long-distance or European) is best at providing the important factors. Please put **one tick** indicating importance and **one tick** for which type of holiday provides this best. **Please only provide the second tick where the factor is either important or extremely important”**

Respondents were then presented with a list of drivers and a 5-point Likert response range (presented from left to right), with corresponding codes used in the analysis (see Appendix 4):

Extremely unimportant - 1

Unimportant – 2

Neither important nor unimportant – 3

Important - 4

Extremely Important - 5

Very few people omitted a response to an item (as can be seen in Table 7.17). However, the number of people who responded to the type of holiday question is necessarily limited to those who thought the item was 'important' or 'very important'. Although participants were asked to tick one box to indicate a type of holiday, many ticked both, indicating that they thought that both types of holidays were equally important. An additional category, was created when coding the results to allow for this – however the results of this must be viewed cautiously, as it is likely that some people may have chosen this option had it been given, but instead followed the instructions.

The data indicate that appropriate items were included for holiday drivers because all items were answered by most respondents, suggesting none were seen as irrelevant: There was a maximum non-response rate of 3, with the modal response number being 80, therefore, as the complete sample was 82, in most cases, only two respondents did not answer a particular item question. Additionally, a space was provided for other factors important in motivating holiday-taking and only four people added something in this space (Table 7.17 summarises the reasons). A dash indicates non-response for that element of the question.

Table 7.17 Additional holiday drivers

Other reason	Likert Score	Type of holiday which most fulfils the need
Visit family	4	3
To provide memories and special times for my family	-	2
Return to destinations from earlier years	4	2
Discovery of new wildlife	4	-

Responses given in the 'other' category for drivers of holidays, associated Likert score and indication if either European or long-distance holidays best provide for the factor.

Frequency analysis was performed on the items, specifically proportional results for each item based on those frequencies, along with the mode, median and mean response (Table 7.18). The mean of Likert-type items is often not considered a valid assessment due to the ordinal nature of the categories (Field, 2009).

However, it has been reported here in order to be read alongside the variety of other analyses performed, in order to suggest the general tendency of the responses. The positive, neutral or negative orientations were calculated by summing the important (4) or extremely important (5) and the unimportant (2) or extremely unimportant (1) responses. To aid interpretation of this table, the items have been re-ordered by the positive (important) orientation.

Of the 17 items assessed, 11 were seen as important by at least 50%. These items are also those which have a mode and median of 'Important' (4), except for 'because I can afford it' which had a median response of neutral (3). No items were seen as 'unimportant' or 'extremely unimportant' by more 50% of respondents.

Table 7.18 Drivers of leisure flights

	n=												Type of holiday			n=
		Extremely un-important (1)	Un-important (2)	Neither important nor un-important (3)	Important (4)	Extremely important (5)	Un-important (1 or 2)	Neutral (3)	Important (4 or 5)	Mode	Median	Mean	Long-distance	European	Both	
To be in beautiful surroundings (Experiential)	80	1%	3%	15%	65%	16%	4%	15%	81%	4	4	3.91	50%	38%	12%	52
To spend time with people close to me (Relational annexed)	79	1%	6%	15%	41%	37%	8%	14%	78%	4	4	4.03	27%	58%	15%	48
To experience a different lifestyle (Experiential)	82	1%	7%	15%	68%	9%	9%	15%	77%	4	4	3.77	57%	32%	11%	53
To take me away from the routine of life (Functional)	80	3%	6%	15%	48%	29%	9%	15%	76%	4	4	3.99	28%	58%	13%	53
To provide stimulating experiences (Experiential)	80	1%	5%	18%	63%	14%	6%	18%	76%	4	4	3.85	56%	34%	10%	50
To be in sunny weather (Experiential)	80	5%	5%	16%	54%	20%	10%	16%	74%	4	4	3.65	44%	42%	15%	48
To relax (Functional)	80	1%	14%	19%	43%	24%	15%	19%	66%	4	4	3.81	23%	58%	19%	43
To give me something exciting to look forward to (Experiential)	80	1%	6%	28%	46%	19%	8%	28%	65%	4	4	3.73	45%	43%	13%	40
To find out about how other people live (Experiential)	80	1%	5%	30%	54%	10%	6%	30%	64%	4	4	3.65	66%	25%	9%	44
To alleviate the pressure that builds up in my life (Functional)	81	6%	20%	20%	38%	16%	26%	20%	54%	4	4	3.54	25%	61%	14%	36
Because I can afford it (Relational annexed)	79	4%	11%	34%	46%	5%	15%	34%	51%	4	3	3.34	41%	59%	0%	32
To interact with new people (Relational)	80	4%	13%	40%	36%	8%	16%	40%	44%	3	3	3.27	62%	28%	10%	8
To make me feel free (Experiential)	81	2%	20%	35%	30%	14%	22%	35%	43%	3	3	3.34	52%	35%	13%	31
To pursue my hobbies (Functional annexed)	80	5%	29%	40%	15%	11%	34%	40%	26%	3	3	2.29	32%	63%	5%	19
To provide something interesting to share with friends (Relational)	80	8%	31%	44%	16%	1%	39%	44%	18%	3	3	2.69	36%	55%	9%	11
To interact with people who are similar to me (Relational)	79	8%	23%	58%	6%	5%	30%	58%	11%	3	3	2.70	50%	50%	0%	8
To find out about myself (Relational)	79	20%	19%	49%	10%	1%	39%	49%	11%	3	3	3.51	60%	20%	20%	10

To be in beautiful surroundings was the item with the most positive agreement about its importance (81%), and it was long-distance holidays that were most important at providing this, for 50% of people, with the others split between European (38%) and both (13%) With just slightly less people seeing it as important (78%), 'to spend time with people close to me', had higher number of respondents indicating it was extremely important (37% compared to 16% for beautiful surroundings) and this was fulfilled by European holidays for many more people than by long-distance (58% compared to 27%). This was the highest level of extreme importance of any of the items, suggesting European holidays are an important way of taking time to be with other people.

Experiencing a different lifestyle was also an important reason for taking holidays for a large number of people (77%) and this was fulfilled by long-distance holidays for most people (57%) whereas getting away from the routine of life (76%) was a driver that European holidays were seen as best at providing (58%). The types of drivers that are most important to people, and the noticeable difference between long-distance holidays and European holidays in providing for them, is best seen by looking at the results grouped into need satisfaction categories (Table 7.18). Each category will now be analysed, with the three annexed items, as a result of the reliability analysis in Section 7.6.1.1.1, analysed separately.

7.6.1.2.1 Experiential drivers

Table 7.19 shows that, by need category, experiential needs were seen as most significant in motivating holidays with 69% of respondents, on average, indicating they judged the 7 experiential items to be 'important' or 'extremely important' and only 9% indicating the item was 'unimportant' or 'extremely unimportant'. All but one experiential item was important for taking holidays by a majority of respondents. Only, 'to make me feel free', was not important for a majority of respondents (43%). Furthermore, for all experiential need satisfaction items, long-distance holidays were, to a greater or lesser extent, more appropriate to respondents than European holidays. On average, 53% of respondents thought these experiential needs were best served by long-distance holidays, compared to 36% European. This is particularly so for finding out about how other people live,

where 66% indicated that long-distance holidays were most important (the strongest preference for holiday type across all items); experiencing a different lifestyle (57% indicated long-distance) and providing stimulating experiences (56% indicated long-distance). A hypothesis emanating from this is that the social systems of far-away places are considered to be more dissimilar to the UK (and more stimulating), than places within Europe.

As these three items are important for a large majority of respondents (64%, 77% and 76% respectively), the symbolic association between 'difference' and far-away locations is potentially one crucial factor in why long-distance air travel is utilised for holidays by this sample. Additionally, stimulating experiences are seen to be best served by long-distance holidays, possible because 'difference' is seen as more stimulating. One of the difficult challenges for social marketing in order to reduce the energy consumption of HIH due to long-distance holidays, is therefore to enable UK holidays, or European holidays by train, to be more symbolically linked to a sense of stimulation and difference.

The environmental experience of a holiday, in terms of the beauty of the surroundings and sunny weather, was also important whereas long-distance holidays were slightly more important at providing beautiful surroundings. Neither European nor long-distance holidays were supported by a majority as the most important way of providing sunny weather. Although both were important for a large majority of people, 'to be in beautiful surroundings', was important to slightly more respondents (81%) than 'to be in sunny weather' (74%). This is a useful finding, because it is more challenging for social marketing to effectively increase perceptions of sunny weather in locations easily reachable by lower energy transport, than it is to emphasise the more subjective beauty of such holidays.

Table 7.19 Drivers of holidays by air by need satisfaction category

	Positive	Neutral	Negative	Satisfied by long distance	Satisfied by European	Satisfied by both equally
To be in beautiful surroundings	81%	15%	4%	50%	38%	12%
To experience a different lifestyle	77%	15%	9%	57%	32%	11%
To provide stimulating experiences	76%	18%	6%	56%	34%	10%
To be in sunny weather	74%	16%	10%	44%	42%	15%
To give me something exciting to look forward to	65%	28%	8%	45%	43%	13%
To find out about how other people live	64%	30%	6%	66%	25%	9%
To make me feel free	43%	35%	22%	52%	35%	13%
Experiential Average	69%	22%	9%	53%	36%	12%
To take me away from the routine of life	76%	15%	9%	28%	58%	13%
To relax	66%	19%	15%	23%	58%	19%
To alleviate the pressure that builds up in my life	54%	20%	26%	25%	61%	14%
Functional Average	66%	18%	17%	26%	59%	15%
To interact with new people	44%	40%	16%	62%	28%	10%
To provide something interesting to share with friends	18%	44%	39%	36%	55%	9%
To interact with people who are similar to me	11%	58%	30%	50%	50%	0%
To find out about myself	11%	49%	39%	60%	20%	20%
Relational Average	21%	48%	31%	52%	38%	10%
To spend time with people close to me	78%	14%	8%	27%	58%	15%
Because I can afford it	51%	34%	15%	41%	59%	0%
To pursue my hobbies	26%	40%	34%	32%	63%	5%

7.6.1.2.2 Functional drivers

Although not as important as experiential needs, functional needs were in general important drivers of holidays, with 66% of respondents, on average, indicating the items were 'important' or 'extremely important' and only 16%, on average, indicating they were 'unimportant' or 'extremely unimportant' (Table 7.19). All three functional drivers, (following the annexing of 'to pursue my hobbies' due to the Cronbach Alpha analysis), were important for the majority of respondents. Whereas experiential needs satisfiers were consistently linked by respondents to long-distance holidays by more respondents, for functional need satisfiers

European holidays were consistently more important. 'To take me away from the routine of life' indicates a need to alleviate boredom and was important for the largest majority of the functional needs (76%), with 29% of respondents indicating it was 'extremely important'. 58% of respondents thought that European holidays were best at breaking routine, compared to long-distance at 28%. 'To alleviate the pressure that builds up in my life' is about relieving stress, and although less important overall, 54% judged it as important. Again, more people thought European holidays were best at meeting this (61%), a greater number than for any other of the 17 items. Relaxation was an important driver for 66%, and 58% judged European holidays to be the best at providing this, compared to 23% long-distance and 19% both. This is contrary to the common wisdom that long-distance holidays are associated more frequently with relaxation. In fact, the impression that European holidays are used for stimulation e.g. city breaks, and long-distance holidays for relaxing on distant island beaches seems to be reversed with these findings.

The data indicate that European holidays are used as a reactive tool by HIH to help deal with more immediate emotions of life related to monotony and stress, whereas, long-distance holidays are more often used in what seems to be a proactive way to achieve self-development and more fundamental stimulation. As European holidays are in the main cheaper and take less time to get to, it is intuitive that they would be used in this way compared to long-distance holidays.

7.6.1.2.3 Relational drivers

Relational needs are about creating and maintaining social connections and personal and social identities. As outlined previously, these are the most difficult to measure, as they are subject to strong SDR and are also conceptually more abstract, meaning respondents may not be aware of their needs in these areas.

Therefore, it is perhaps not surprising that relational items were least important overall, with only 21% of people, on average, indicating the 4 remaining relational items (after reliability analysis where 'to spend time with people close to me' and 'because I can afford it' were annexed) were a motivation for taking a holiday,

compared with 31% average indication that these items were 'unimportant' or 'extremely unimportant'. To 'interact with new people', was supported by 44% of respondents and so could be considered to have a reasonable amount of support by respondents. However, the level of reaction against the rest of these items is larger than was expected. 'To interact with people who are similar to me' only had positive support from 11% of people and was seen as unimportant by 30% of respondents. This appears to underline the notion that difference is more important than familiarity as a motivation for holidays within the sample. 'To provide something interesting to share with friends' was supported by only 18% with a very high 39% of people seeing it as unimportant and 8% judging it as 'extremely unimportant'. 'To find out about myself' evoked the strongest response against its importance, with 20% of people rating it as extremely unimportant, and 19% as unimportant (39% combined).

7.6.1.2.4 Annexed drivers

As a result of the reliability analysis that was performed on the need categories, three items were annexed overall: 'to spend time with people close to me', 'because I can afford it' and to pursue my hobbies. As shown in Table 7.20, 'to spend time to people close to me' had the second highest level of positive support for its importance, and a much higher proportion of people thought it was 'extremely important', more than any other item (37%). It is therefore significant that a majority of people thought that European holidays were best at meeting this need (58%) compared to 27% long-distance and 15% both equally. 'Because I can afford it' was also important with a majority of people (51%), which is particularly interesting for this study, as it alludes directly to the importance of the possession of money as a motivator, in itself, for high-energy use, although the antecedents of this response are likely to be complex and require deeper investigation. Again, this was best met by European holidays (59%) compared to 41% long-distance, with nobody indicating both were equal in meeting this driver.

7.6.1.2.5 Lifestyle norms of leisure flight consumption levels

The data reveal (Tables 7.20 and 7.21) that taking two long-distance holidays a year is seen as normal, compared to other households on a similar income, which

is a very high amount in energy and emission terms. The normal number for European holidays also appear to be two, although 22% feel this is a lower number than normal. There is more certainty that this is not overly high, than is the case with long-distance holidays.

Table 7.20 The normative context of long-distance holiday-taking

		Number of long distance holidays compared to other households on a similar income						
		We take none	We take far fewer	We take fewer	We take about the same	We take more	We take far more	Total
Number of long distance holidays a year	1	11	5	11	5	0	0	32
	2	0	0	6	23	8	0	37
	3	0	0	0	3	2	2	7
	4	0	0	0	0	1	0	1
	Total	11	5	17	31	11	2	77

Table 7.21 The normative context of European holiday-taking

		Number of European holidays compared to other households on a similar income						
		We take none	We take far fewer	We take fewer	We take about the same	We take more	We take far more	Total
Number of European holidays a year	1	0	0	2	1	0	0	3
	2	0	1	17	30	1	0	49
	3	0	1	0	9	6	1	17
	4	0	0	1	2	3	0	6
	5	0	1	0	0	0	1	2
	Total	0	3	20	42	10	2	77

7.6.1.3 Bivariate analysis

7.6.1.3.1 Leisure flight drivers and psychological and socio-demographic variables

In order to understand if there was a relationship between different drivers of holidays and any other socio-demographic or behavioural variables, Kendall's Tau correlation coefficients, or Mann Whitney U-tests (where a dichotomous variable was tested), were produced for the n=82 sample, which represented those who tend to take holidays by air annually. No driver was significantly positively or negatively correlated to actual consumption (kWh per adult) of either long-distance or European holidays. However, there were a number of drivers that were negatively correlated with long-distance holidays, these were: 'To take me away

from the routine of life' ($r_t = -.26$, $p < .05$); 'to alleviate the pressure that builds up in my life' ($r_t = -.22$, $p = .05$); to relax ($r_t = -.24$, $p < .05$) and 'to be in beautiful surroundings' ($r_t = -.25$, $p < .05$). This confirms the descriptive analysis which already revealed that all, except being in beautiful surroundings, were more related to European holidays. The negative correlations indicate that those who feel that these factors are more important are less likely to take long-distance holidays, or that those who take more long-distance holidays feel these factors are less important.

As it was revealed in Section 1 of this chapter, households with more 60-74 year olds were more likely to take long-distance holidays, correlation coefficients were produced to test the theory that the lack of importance this group place on the above variables influenced the negative relationships found. This theory was supported, with the significant coefficients for this age group being: 'To alleviate the pressure that builds up in my life' ($r_t = -.34$, $p < .01$); 'to relax' ($r_t = -.36$, $p < .01$). In addition, significant negative correlations were found between 'to make me feel free' ($r_t = -.21$, $p < .05$) and 'to spend time with those close to me' ($r_t = -.21$, $p < .05$).

These, mostly functional variables, as well as being negatively correlated to households with more 60-75 year olds, and the associated variables of smaller, older households (which is consistent with the results in Section 1 on the full higher-income respondent sample), were also in general significantly positively correlated to larger households ('to take me away from the routine of life' $r_t = .27$, $p < .01$, 'to relax' $r_t = .20$, $p < .05$, 'to spend time with people close to me' $r_t = .29$, $p < .01$) and households with more babies ('to take me away from the routine of life' $r_t = .32$, $p < .01$, 'to relax' $r_t = .26$, $p < .01$, 'to alleviate the pressure that builds up' $r_t = .22$, $p < .05$, 'to spend time with people close to me' $r_t = .24$, $p < .01$). Additionally, 'to be in sunny weather' was correlated to having more babies in the household ($r_t = .25$, $p < .01$). Section 1 showed that female respondents are more likely to represent larger younger households, and this is replicated in this smaller

sample. Mann Whitney U-tests were performed for gender, and this revealed that females are significantly, positively, correlated (and therefore males significantly, negatively, correlated) to 'to spend time to those close to me' ($U=559$, $z=-2.78$, $r=.31$, $p<.01$). Additionally, there is a correlation with 'to find out about myself' ($U=579$, $z=-1.987$, $r=.22$, $p<.05$) and 'because I can afford it' ($U=559$, $z=-2.19$, $r=.25$, $p<.05$).

Returning to the question of what drives 60-75 year olds to take long-distance holidays, as well as the large number of factors that did not drive them, 'to provide stimulating experiences' was positively correlated ($r_t=.21$, $p<.05$). The search for stimulation was also positively correlated to assets ($r_t=.22$, $p<.05$) and higher education levels ($r_t=.22$, $p<.05$). Whereas this was the only driver that assets were correlated with, income was correlated with a number of different variables, again underlining the difference between income and assets. Income was significantly positively correlated with: 'To make me feel free' ($r_t=.26$, $p<.05$) and 'to alleviate the pressure that builds up in my life' ($r_t=.24$, $p<.05$). The potentially demanding requirements of jobs that offer a high income may be related to these functional need satisfaction areas, although no significant relationship between income and age of household members (i.e. retirees) was found. Income was also significantly related to finding out how other people live ($r_t=.21$, $p<.05$).

These results indicate that there are a number of specific things that 60-75 year olds are less likely to want from a holiday. Possibly due to retirement, or semi-retirement, they are not driven by the motivation to relax, or relieve the pressures of life which are both functional need satisfiers and which are connected with European holidays. They also don't tend to look for a sense of freedom, and don't tend to use holidays to spend quality time with family and friends. Instead they more likely to be looking for stimulation, something connected more often with long-distance holidays.

The results also confirm that the two main types of households found in Section 1, are also translated into drivers for holidays. 60-75 year olds, being part of the older smaller household. are negatively connected with holiday drivers that are at the same time positively related to younger, larger households, particularly those with babies and children. Despite the indication of a stronger preference for long-distance holidays, at the same time the number of European holidays was also connected to more 60-75 year olds in a household.

7.6.1.3.2 Leisure flight drivers and psychological variables

A bivariate analysis showed that the relationship between long-distance holidays (kWh per adult) and altruism that was found for the full sample ($n=110$) (See Section 1), was also found for the sample of high-energy holiday consumers, and in fact was slightly stronger ($r_t=.20$, $p<.05$).

The results of the full correlation analysis revealed some important insights about altruism. Of the three values tested, whereas egoism was not significantly correlated to any holiday drivers, and biosphericism only weakly related to 'to interact with new people' ($r_t=.23$, $p<.05$), altruism was significantly correlated with five drivers, indicating that those who are more altruistic are likely to see holidays as proving a range of need satisfaction. This is reinforced by a significant positive correlation between altruism and the sum of scores for holiday drivers ($r_t=.22$, $p<.01$). The two most significant factors were 'to interact with new people' ($r_t=.30$, $p<.01$), followed by a search for stimulating experiences ($r_t=.26$, $p<.01$) which is the factor also connected with the number of 60-75 year olds in a household, and both factors are connected more frequently with long-distance holidays. Although altruism is not significantly correlated to the number of 60-75 year olds in a household, the fact that they both have a significant relationship with searching for stimulating experiences means that this item is likely to be a important one to focus on for social marketing purposes, even though it is not in itself significantly correlated to actual leisure flights taken.

As with female respondents, altruistic people had a tendency to use holidays to find out about themselves ($r_t=.19$, $p<.05$), which is also connected with long-distance holidays. The other two significant factors were, 'to give me something exciting to look forward to' ($r_t=.21$, $p<.05$) and 'to provide something interesting to share with friends' ($r_t=.18$, $p<.05$). Interestingly, this latter driver was something that, in the sample as a whole, was only seen as important by 18% of people with 39% seeing it as unimportant. These results indicate that the more altruistic someone is, the more likely they are to see experiential and relational factors as being important for holidays, and these are related to interaction with people, exploration of the self and others and stimulation. They do not look for holidays as a reactive aid to dealing with life, which is why, potentially, they are likely to seek these factors in long-distance rather than European holidays.

The psychological variable analysis also revealed important insights into how materialism, identity and environmental concern operate to influence energy use from leisure flights. The affluent identity was not significantly correlated with any driver, however, the environmentalist identity was significantly negatively correlated to 7 of the 17 drivers. To be in sunny weather was particularly strongly negatively correlated ($r_t=-.41$, $p<.01$), and 'to be in beautiful surroundings' was also negatively correlated ($r_t=-.21$, $p<.05$). All the functional need satisfiers were significantly negatively related: 'To relax' ($r_t=-.23$, $p<.05$); 'to take me away from the routine of life' ($r_t=-.19$, $p<.05$), 'to alleviate the pressure that builds up in my life' ($r_t=-.24$, $p<.01$). Additionally, 'to make me feel free' ($r_t=-.18$, $p<.05$), 'to give me something exciting to look forward to' ($r_t=-.21$, $p<.05$). No driver was positively correlated.

This indicates something potentially important about how the self-perception that one is an environmentalist is strongly connected to how important holidays are seen as overall (from Section 1) and specifically what need satisfaction is connected with those types of holidays. What is interesting is that this appears to

have much greater power than biospheric values or environmental concern. In addition, the more materialistic respondents were, the less important interacting with new people was as a reason for taking holidays ($r_{\tau} = -.22$, $p < .05$), which may suggest a more internal focus that is consistent with self-enhancement perceptions of materialism. It is interesting to note that income, as outlined earlier, was positively related to interacting with new people, which provides potential detail to the fact that income and materialism are not correlated. Environmental concern was positively correlated with the search for stimulating experiences ($r_{\tau} = .28$, $p < .01$) and less strongly in terms of pursuing hobbies ($r_{\tau} = .20$, $p < .05$).

7.6.2 Constraints to increased numbers of leisure flights

7.6.2.1 Sample rationalisation and analysis

7.6.2.1.1 Sample rationalisation

Only those who wanted to take more holidays and who normally took holidays by air were of interest for this analysis and therefore the samples were rationalised to remove those that didn't, or who didn't answer. Because barriers were collected for long-distance and European holidays separately, the samples were rationalised for both types of holiday. From the full sample ($n = 110$), 16 people (14.5%) noted that they did not want to take more long-distance holidays, even if all barriers were removed ($n = 40$ did not answer). From the remaining long-distance sample of 54, those who didn't usually travel to destination by plane, or who didn't answer, were removed ($n = 3$: 2 went by car and 1 didn't state). Therefore the rationalised sample of those who wanted more long-distance holidays by air was $n = 51$. For European holidays, a slightly higher 19% ($n = 21$) did not want to take more European holidays ($n = 16$ did not answer) a further 25 respondents were removed because they didn't disclose how they got to their destination or they didn't usually travel to their European destination by plane, ($n = 25$: 1 train, 12 car, 2 coach, 9 boat, 1 didn't state). The final European holiday sample was therefore $n = 48$.

7.6.2.1.2 Between group analysis

In order to find out if those who didn't want more holidays were significantly different from those that did, as previously, an exact Mann Whitney U-tests were carried out on the two groups for both long-distance and European holidays.

For long-distance holidays there was a difference in the age of respondents, with those that wanted to take more holidays being significantly younger ($U=364$, $z=-1.97$, $r=.23$, $p<.05$), and having a much higher energy use from cars ($U=287$, $z=-2.78$, $r=.33$, $p<.01$). Additionally, those who wanted to take more long-distance leisure flights also had higher levels of materialism ($U=291$, $z=-2.30$, $r=.28$, $p<.05$). In Section 1, where absolute, ideal, numbers of holidays were correlated with psychological variables, no significant relationship was found between materialism and ideal holidays. However, by looking specifically at the gap between current and desired, as was done here, materialism does play a role. So whereas materialism doesn't affect the absolute number of long-distance holidays people want to take, it does affect the desire for more.

For European holidays, materialism did not play a role, however, those who wanted more European holidays had higher levels of affluent identity ($U=721$, $z=-2.78$, $r=.29$, $p<.01$) and higher levels of value conflict ($U=796$, $z=-2.70$, $r=.28$, $p<.01$). Additionally, there was a significant difference in the education category ($U=657$, $z=-3.47$, $r=.38$, $p<.01$). A Fisher's exact test which analyses results that deviate from chance by category, indicated this is likely to arise from a significantly lower number of respondents with a higher degree (Master's or higher) wanting more European holidays ($z=-2.2$) ($X^2=14.717$, $p<.01$). The final significant finding was that those who wanted more European holidays already took more European leisure flights ($U=574$, $r=.42$, $p<.01$). This suggests a culture of taking European holidays may exist where consumption spurs more consumption. Although not significant, the reverse was true for long-distance holidays where those that wanted more had a lower current energy use from long-distance holidays.

It would have been expected that psychological orientation would have been significantly different between the groups. The fact that it was not, suggests that those who took leisure flights every year had a similar value orientations to the general sample, with high levels of biosphericism and altruism and low levels of materialism. Frequency analysis presented in Tables 7.22 and 7.23 confirm this.

Table 7.22 Psychological frequency analysis of those taking annual long-distance leisure flights

	Biospheric values	Altruistic values	Environmental identity	Environmental concern	Egoistic values	Materialism	Affluent identity
n =	51	51	51	51	51	48	51
Missing	0	0	0	0	0	3	0
Mean	4.09	4.14	3.04	0.47	3.07	2.53	3.23
Median	4.00	4.00	3.00	0	3.00	2.55	3.20
Mode	4.00	4.00	3.00	0.00	3.40	2.35	3.00

Table 7.23 Psychological frequency analysis of those taking annual European leisure flights

	Biospheric values	Altruistic values	Environmental identity	Environmental concern	Egoistic values	Materialism	Affluent identity
n =	46	47	48	48	44	44	47
Missing	2	1	0	0	4	4	1
Mean	4.10	4.20	2.99	0.44	2.92	2.41	2.99
Median	4.00	4.30	3.00	0	2.80	2.40	3.00
Mode	3.80	4.00	3.00	0.00	2.80	2.40	3.00

A Kruskal-Wallis test was also performed to see if there was any significant difference between the three original geographic samples. The results showed there was no significant difference between the samples.

7.6.2.1.3 Extent of unrestrained demand

Considering only those respondents who normally travel by air to their holiday destination, on average, respondents would ideally take 2.2 long-distance holidays a year, if the barriers to long-distance holidays were removed. This translates into an average uplift of 1.51 long-distance flights per respondent per year for the 51 in the sample. For European holidays, the 48 respondents would ideally take 3 holidays a year – a 1.67 average uplift per respondent. These are significant

uplifts. However, it should be noted that an increase in holiday flights for the respondent householder is likely to result in an increase for the entire household which increases the energy results massively and the importance of retaining or strengthening barriers to consumption.

7.6.2.2 Descriptive and bivariate analysis

As was outlined in detail in Chapter Five, barriers to increased holidays by air were assessed through Likert-type items. Long-distance and European holidays were interrogated separately. Having been asked what their current and ideal number of holidays was, for both types of holiday, the respondent was asked:

“Please indicate how far you agree with each of the following statements about what is stopping you take your ideal number of (long-distance or European) holidays.

Please tick one box for each line. If you have an additional barrier please add to the last line.”

Respondents were then presented with a list of items and a 5-point Likert response range (presented from left to right), with corresponding codes used in the analysis:

Strongly disagree – 1

Disagree - 2

Neither agree nor disagree – 3

Agree – 4

Strongly agree – 5

Nearly all the questions on constraints to increased holidays were answered by almost all respondents: The modal response for long-distance holidays items was 49 (out of 51), and for European holidays 47 (out of 48). Table 7.24 shows the Likert scores' mode, median and mean for each item re-ordered by the combined percentage total of the two agreement responses ('agree' and strongly agree'). The neutral response percentage and the negative response percentage ('disagree' and 'strongly disagree') are also reported.

Table 7.24 Constraints to increased holidays

	n=	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)	Disagree (1 or 2)	Neutral (3)	Agree (4 or 5)	Mode	Median	Mean
LD I don't have the time (functional)	51	10%	12%	14%	43%	22%	22%	14%	65%	4	4	3.6
LD I don't have the money (functional)	50	4%	16%	16%	34%	30%	20%	16%	64%	4	4	3.7
EURO I don't have the money (functional)	47	6%	17%	17%	36%	23%	23%	17%	60%	4	4	3.5
EURO I don't have the time (functional)	46	17%	15%	15%	35%	17%	33%	15%	52%	4	3	3.2
LD It is impractical (functional)	49	27%	22%	20%	22%	8%	49%	20%	31%	1	3	2.6
EURO It is impractical (functional)	47	21%	30%	21%	23%	4%	51%	21%	28%	2	2	2.6
LD It wouldn't fit with my values (relational)	49	35%	33%	20%	10%	2%	67%	20%	12%	1	2	2.1
EURO I am at the wrong stage of life (functional)	48	40%	29%	21%	8%	2%	69%	21%	10%	1	2	2.0
LD I would feel guilty (experiential)	49	35%	27%	31%	6%	2%	61%	31%	8%	1	2	2.1
LD I am at the wrong stage of life (functional)	49	39%	29%	24%	6%	2%	67%	24%	8%	1	2	2.0
EURO It wouldn't fit with my values (relational)	47	34%	32%	28%	6%	0%	66%	28%	6%	1	2	2.1
EURO In reality I would not enjoy it (experiential)	46	48%	37%	11%	2%	2%	85%	11%	4%	1	2	1.9
EURO I would feel guilty (experiential)	47	47%	32%	17%	2%	2%	79%	17%	4%	1	2	1.8
LD It wouldn't fit with my identity (relational)	49	45%	39%	14%	2%	0%	84%	14%	2%	1	2	1.7
LD In reality I would not enjoy it (experiential)	49	55%	33%	10%	0%	2%	88%	10%	2%	1	1	1.6
EURO It wouldn't fit with my identity (relational)	47	55%	30%	15%	0%	0%	85%	15%	0%	1	1	1.6
EURO My family and friends would disapprove (relational)	47	53%	30%	17%	0%	0%	83%	17%	0%	1	1	1.6
LD My family and friends would disapprove (relational)	49	53%	33%	14%	0%	0%	86%	14%	0%	1	1	1.6

The following examination will combine descriptive and bivariate analysis by theme.

7.6.2.2.1 Time and money

The results indicate that, as would be expected with all groups, time and money are also important for the HIH sample in restraining increased energy heavy holidays. For long-distance holidays, which are often both time consuming and expensive, as expected, both time and money restrain consumption for a very

similar number of the sample (65% and 64% respectively). However, more respondents 'strongly agree' with money as a constraint (30%) compared to time (22%). For European holidays however, money is a barrier for more respondents (60%) than time (52%). A bivariate analysis with socio-demographic variables reveals that those seeing time as an issue for long-distance holidays are less likely to be households with 60-75 year olds ($r_t=.26$, $p<.05$) and more likely to be adults ($r_t=.27$, $p<.05$). Those seeing money as a constraint are also less likely to have an affluent identity but only for long-distance holidays ($r_t=-.27$, $p=.01$). Money was, predictably, less of a constraint for those with higher income and assets for both long-distance ($r_t=-.33$, $p<.05$, $r_t=-.47$, $p<.01$, respectively) and European holidays ($r_t=-.32$, $p<.05$, $r_t=-.26$, $p<.05$, respectively), with the very strong relationship between assets and long-distance holidays notable.

It is noteworthy that although the sample is of HIH, money is still an important factor restraining increased energy consumption from holidays for a large number of respondents. This is concerning, particularly considering the historically cheap nature of European holidays, as only a small increase in income could easily translate into the desired number of additional European holidays. The important role that lack of time appears to be playing in restraining consumption of higher energy holidays (60-75 year olds excluded in terms of long-distance holidays), highlights a potential rebound effect in promoting increased leisure time to HIH as an alternative to long working hours, in order to satisfy material consumption (e.g. Shor), without associated social marketing to reduce demand for holidays by air.

7.6.2.2.2 Lifestage and age structure of household

Lifestage and age structure of the household are again reinforced as important factors for specific groups. Larger households ($r_t=.25$, $p<.05$) and households with more children ($r_t=.32$, $p<.01$) were more likely to agree that if they took their ideal number of long-distance holidays they would not enjoy it in reality. 60-75 year olds were less likely to see long-distance holidays as impractical ($r_t=-.28$, $p<.05$).

7.6.2.2.3 Gender

Females were significantly more likely to say that they would not actually enjoy more long-distance holidays ($U=462$, $z=-1.96$, $r=.23$, $p<.05$) and that they were more likely to see long-distance holidays as impractical ($U=423$, $z=-2.30$, $r=.27$, $p<.05$). This is potentially connected to the fact they are more likely to represent larger younger families with more babies, as detailed in Table 7.9 in Section 7.5.3.

7.6.2.2.4 Environmental considerations as constraints

As is described in Chapter Five, the questionnaire was designed to reduce SDR and get responses about current and desired energy use from respondents that are as accurate as possible. Only at the end of the questionnaire were environmental values and identity questioned directly. Consequently, it was decided that posing environmental constraints explicitly, would have potentially increased SDR. It was also concluded that environmental constraints could be expressed by respondents in a number of other ways. Firstly, space was given for people to indicate any additional barriers they thought were important, and this is where specific environmental constraints could have been expressed. Ten people indicated an additional barrier to long-distance holidays (see Table 7.25) and three to European holidays. Only two respondents mentioned that environmental issues, carbon emissions specifically, were a barrier, and one of these expressed this for both types of holidays. This implies that environmental issues are not widely seen as a constraint for respondents.

Table 7.25 Additional holiday constraints

Long distance holidays	
Additional constraints	Likert Score
Carbon emissions	4
Holiday entitlement	-
School holidays preclude chance as prices soar	-
Disability	4
I'm concerned about my carbon footprint	5
Too many great places in UK (eg Scotland)	5
Toddler & baby is main reason	5
It would be difficult with young children	5
Difficulty looking after pets	5
It doesn't interest me	4
European holidays	
Additional constraints	Likert Score
Carbon emissions	4
Holiday entitlement	-
Prefer to drive	-

Additionally, three other items were included as constraints, which were deemed to prompt an agreement if an environmental concern was acting as a barrier to increased holidays by air. These were: 'I would feel guilty', 'it wouldn't fit with my values' and 'it wouldn't fit with my identity'. Additionally, a sense of social and cultural environmentalism, via significant others, would have been revealed through response to the item 'my family and friends would disapprove'. It is recognised however, that a confirmatory response to any one of these items could also be because of concern about profligacy, which is another known socially undesirable trait.

The descriptive results in Table 7.24, indicate that environmental issues are not likely to be a large constraint for respondents. Far more respondents actively disagreed with each of the barriers mentioned above than agreed. No-one agreed with that 'my friends and family would disapprove' was a barrier, as discussed above, the item was disagreed with by over 80% and strongly disagreed with by a majority for both long-distance and European holidays. However, those with more children were also significantly more likely to see family and friends disapproving as a constraint to long-distance holidays ($r_t = -.31$, $p < .05$). Bivariate analysis indicated that where there are more children in a household, there is a greater likelihood of feeling that family and friends would disapprove ($r_t = .31$, $p < .05$). However, this could be for reasons such as health risks or taking children out of school rather than environmental reasons.

Although the other three items also elicited disagreement from a majority of respondents, as shown in Table 7.24, far more people agreed that there were constraints for long-distance holidays than for European. Although small proportions, double the percentage of people thought 'I would feel guilty' (8%) and 'it wouldn't fit with my values' (12%) were barriers and 2% (one person) thought 'it wouldn't fit with my identity' was a constraint for long-distance holidays, as opposed to no-one for European holidays. This suggests long-distance holidays might be seen as more impactful to the environment or more profligate than European holidays, something which is expected given their higher cost and

environmental impact. However, it also indicates that very few people see these as real constraints to high-energy consumption when it comes to holidays.

Bivariate analysis of psychological and socio-demographic variables revealed that there were no correlations with European holidays. For long-distance holidays, those respondents who had more babies in the household were significantly less likely to see identity as a constraint to long-distance holidays ($r_t = -.28$, $p < .05$). Those who were more materialistic were less likely to see a lack of fit with values ($r_t = -.24$, $p < .05$) as a constraint to long-distance holidays. Contrastingly, the environmentalist identity correlated positively with an expected feeling of guilt ($r_t = .34$, $p < .01$) and more weakly with a lack of fit with the respondent's values ($r_t = .26$, $p < .05$). Again, this underlines the role of the environmentalist identity, compared to biospheric values that do not correlate positively with any of the environmental based constraints. It also provides evidence for a polarity between materialism and the environmentalist identity. However, the fact that the results were not repeated between the environmentalist identity and 'it wouldn't fit with my identity' suggests that, as suspected, identity as a general concept is difficult for people to relate consciously to themselves and therefore identity should perhaps be tested without use of the term 'identity'.

7.6.3 Summary of the key drivers and constraints of leisure flights

- A large majority of the sample took leisure flights on a yearly basis, and in general two holidays a year was seen as the normal number for people on similar incomes. This is particularly concerning in terms of long-distance holidays as their energy impact is so high.
- The drivers of holidays can be usefully described in terms of experiential, functional and relational. Experiential need satisfiers are, on average, the most important, as would have been expected, with functional need satisfiers also similarly important and relational need satisfiers not important. Spending time with close ones is also seen as very important.

- Additionally, in the main, there is a separation between what type of holiday is connected with these need satisfiers. Long-distance holidays are more often connected to experiential drivers and European holidays are connected with functional need satisfiers, as well as spending time with close ones. The split between those who take one or the other type of holiday for either experiential or functional reasons is somewhat reinforced by negative relationship between functional drivers (most specifically alleviating pressure and relaxing) and the actual consumption of long-distance holidays. A further difference is that there appears to be a culture of European holiday-taking where those that take more, want more, whereas for long-distance holidays those that want more, currently consume less (although not significantly).
- Furthermore, it appears the household's stage of life may be driving these distinctions, with the functional items of relaxing and relieve pressure negatively related to households with more 60-75 year olds in them and yet, these and other functional drivers are positively related to larger households with more babies. The connection between 60-75 year olds and experiential need satisfiers and long-distance holidays appears to be most significant for the driver of 'providing stimulating experiences'
- Although younger households appear to be more inclined to seek need satisfiers that are supplied by European holidays, they (along with households with more over 75s) are less likely to take holidays in the first place, as shown in Section 1. This is partially true for long-distance, but also for European holidays. This is possibly related to the realities of taking children on holiday, as female respondents (who are more likely to represent younger, larger households), are more likely to see holidays as impractical and in reality not enjoyable. These younger respondents are also more likely to want more holidays, suggesting there is a latent demand for what holidays (particularly European holidays) can provide – possibly in terms of functional need satisfaction.
- 60-75 year olds, on the other hand, who are more likely to take both kinds of holidays, were less likely to see time as a constraint to long-distance holidays and also less likely to see them as impractical.

- This suggests that households with 60-75 year olds are a particularly important target group for reducing the energy impact of leisure flight consumption by HH. More specifically, that if they were to be targeted, it would be their long-distance holiday consumption that should be focused on. The symbolic connections between the experiential aspects of these holidays, particularly the stimulation that comes from the perceived difference, would be a useful focus of social marketing.
- Another key factor for leisure flights is their relationship with altruistic values. The analysis of drivers shows that those who are more altruistic find many areas of need satisfiers are connected with holidays. These are in the areas of stimulation, exploration and interaction with others. Two of the most important experiential drivers (stimulating experiences and interacting with new people) are specifically related to long-distance holidays. Therefore, social marketing that explicitly deals with the impact on the poor of climate change and environmental destruction, and connects this directly with long-distance holidays, would be one specific strategy that seems to be supported by the data. Although there is no statistical relationship between the number of 60-75 year olds in a household and levels of altruism, it is suggested that there may be a potential relationship that is hidden by the nature of the household level of the question about them. Therefore, this should be examined by future research.
- Those who indicate that energy concern is a top two priority for the UK, are more likely not to take leisure flights. Additionally, those with a stronger sense of environmentalist identity were less likely to take leisure flights (revealed through the between-group analysis and not over all correlations in Section 1). Additionally, for those that did, the identity was negatively related to seven drivers suggesting there is a strong symbolic connection between being an environmentalist, and not seeing holidays as important in ways that others do, particularly when it comes to functional need satisfaction. There appears to be an operational difference between materialism and the environmentalist identity with the former being positively connected to identity concerns over taking more holidays, and materialism being negatively connected. All other self-transcending orientations appear to have no connection with leisure

flights, which represents an opportunity to create cognitive dissonance to promote a behaviour shift (while strategically avoiding a potential value shift).

- Time and money were by far the most important constraints, without which, many of the sample would be taking more leisure flights – on average about one and a half more every year. However, those with more income and assets are less likely to be constrained by money, and assets are particularly important in liberating people from constraints to long-distance holidays.
- For those who want more holidays, feeling guilty or family/friends not approving was very unimportant, suggesting environmental issues are of little concern. However, those with young children were highest group to feel there would be disapproval, but it is just as likely that this is for other reasons than environmental.
- For the purposes of future analysis it may be that spending time with those who are close, should be grouped with functional items as it may be interpreted as a requirement of life, from time to time rather, than a relationship building exercise.

7.6.4 Drivers of the consumption of large-engine cars

7.6.4.1 Category reliability and sample rationalisation

7.6.4.1.1 Category reliability

In order to assess if the need categories of functional, experiential and relational were valid for the category of cars, Cronbach's Alphas (α) were produced for each set of items, in each category, to assess internal consistency and therefore indicate their reliability. The results (Table 7.26) indicate that all categories have an adequate reliability. Although the functional category is below .7, as referenced earlier, a slight reduction is common for sociological constructs.

Table 7.26 Category reliability of car choice drivers

Cronbach's α	.729	Cronbach's α	.665	Cronbach's α	.904
Experiential (n=104)	Cronbach's α if item deleted	Functional (n=102)	Cronbach's α if item deleted	Relational (n=104)	Cronbach's α if item deleted
It is fun to drive	.654	It will last me a long time	.529	It is attractive to others	.896
It makes me feel in control of my driving experience	.639	It is economical	.648	It reflects my gender	.897
It is part of a hobby interest in cars	.722	It is comfortable	.634	It looks good	.896
It feels like it is well built	.712	It makes me feel safe	.621	It suits me	.917
It is a brand I am used to	.771	It suits my stage of life	.623	It commands respect from other road users	.889
It is exciting to drive	.616	It has a low environmental impact	.673	It is suited to my household's social status	.887
		It is spacious enough	.650	It attracts attention	.889
		It has lots of accessories and special features	.615	It is suited to my household's professional status	.887
		It is reliable	.668	It shows I am not 'one of the crowd'	.891
				It indicates to others that I am financially successful	.890

7.6.4.1.2 Sample rationalisation

DEFRA classifies a large-engine car as one with an engine of two litres or over (DEFRA, 2007c). In order to understand the drivers of owning such a car it was first necessary to reduce the sample to only those who answered questions on a large-engine car. From the full sample of general HIH (n=110), those who did not own a car with a two litre engine or larger were removed (n = 61), as was the one respondent who didn't answer. This resulted in a sample size of n=48 which is 44% of the full sample. It is notable that most people did not own a large-engine car. Those who owned more than one car and the car they liked owning most (and therefore the one they answered questions on drivers about) did not have a two litres engine or larger, were then also removed (n=4). This resulted in a sample of

n=44 HH who answered questions on what drives their consumption of a large-engine car.

7.6.4.1.3 Between group analysis

In order to understand if there were any significant differences between those whose car of choice was a large-engine car, to those for whom it wasn't, a Mann Whitney U-test was performed for both groups against all the psychological, socio-demographic and behavioural variables. This revealed that there were only two significant differences between the groups. Firstly, the level of assets per adult was higher in the group that owned, and preferred, large-engine cars ($U=879$, $z=-2.20$, $r=.22$, $p<.05$), and additionally they had a higher level of energy use from cars ($U=1023$, $z=-2.30$, $r=.22$, $p<.05$). This second finding must be viewed cautiously, as the level of energy use from cars was drawn from annual mileage multiplied by the car emissions (converted to kWh) for each car in the household and divided by each adult in the household. Therefore, the size of the preferred car contributes to the level of energy use. As there was no difference between the groups in terms of psychological variables, this indicates the psychological orientation is similar to the full sample. This is confirmed by descriptive results for the sample which indicates average high biospheric, altruistic values and low levels of materialism (Table 7.27)

Table 7.27 Psychological frequency analysis of large-engine car owners

	Biospheric values	Altruistic values	Environmental identity	Environmental concern	Egoistic values	Materialism	Affluent identity
n =	43	44	44	44	44	43	44
Missing	1	0	0	0	0	1	0
Mean	4.08	4.22	2.95	0.41	3.15	2.43	3.23
Median	4.00	4.30	3.00	0	3.20	2.50	3.20
Mode	4	4 and 5	3 and 4	0	3	3	3

A Kruskal-Wallis test was also performed to see if there were any significant differences between the three original samples. The results showed that there were no significant differences between the samples.

7.6.4.2 Descriptive and bivariate analysis

7.6.4.2.1 Descriptive analysis

As was outlined in detail in Chapter Five the drivers of car ownership were assessed through Likert-type items. After asking what type of cars the household owns, the respondent was asked which car they preferred owning most. As outlined above, only those who preferred a large-engine car most were included in the analysis. To assess the drivers for this particular car the following question was asked before the item list was presented.

“Which factors are important in making you like this particular car? **Please tick one box for each of the statements.**”

Respondents were then presented with a list of drivers and a 5-point Likert response range (presented from left to right), with corresponding codes used in the analysis (see Appendix 4):

Extremely unimportant - 1

Unimportant – 2

Neither important nor unimportant – 3

Important - 4

Extremely Important - 5

Analysis of the responses indicates the questions asked were relevant factors motivating their ownership a large-engine car. Firstly, because there were very few missing answers as can be seen in Table 7.28. Secondly, a space was provided for other factors of importance to be added. Only four people added something in this space:

Table 7.28 Additional reasons for owner's large-engine car

Additional driver	Likert Score
Automatic & cruise control; continual driving - aids driver to drive	-
Tow horse box	4
To have a reliable economical car to get to work and be independent as no buses	-
Open air motoring	5
I need it for work	-
Its a convertible	-

Frequency analysis was performed on the items (Table 7.29). Specifically, proportional results for each item, based on those frequencies, along with the mode, median and mean response were produced. As discussed in reference to leisure flights, the mean of Likert-type items is often not considered a valid assessment due to the ordinal nature of the categories (Field, 2009). However, it has been reported here, to be read alongside the variety of other analyses performed, in order to suggest the general tendency of the responses. The positive, neutral or negative orientations were calculated by summing the important (4) or extremely important (5) and the unimportant (2) or extremely unimportant (1) responses. To aid interpretation of this table, the items have been re-ordered by the positive (important) orientation. Additionally, Table 7.29 reorders the items by need satisfaction category, and includes averages for the category.

Those items attracting most support tended to be functional items. It is important to restate that, as set out in Chapter Five, functionality is interpreted as formed by socio-cultural contexts and a means to fulfilling diverse underlying needs. Reliability, comfort and safety were important for more than 90% of respondents and all were functional, with reliability having by far the highest level of support, with respondents seeing it as extremely important (44%). No respondents thought safety or reliability were unimportant. A feeling that the car was well built (84%), space (82%) and a car that lasts a long time (80%) were important for the next largest proportion of people. These again were generally functional, although feeling that the car was well built was termed as experiential, but could be

interpreted as functional. The greater perceived importance of functional qualities is confirmed by Table 7.30 where it can be seen that on average functional items were seen as important by 67% of respondents. Interestingly, experiential items were also, on average, important for a majority (51%).

As well as feeling well built, feeling in control of the driving experience was important for 65% of respondents, as was the car being a brand they were used to (50%). As with holidays, relational need satisfiers attracted a very low level of support, with only 22%, on average, seeing these needs as important. Although this figure is low, 'it suits me' was 'important' or 'extremely important' for a significant 75% of respondents, and 'it looks good' for 43%. The item that was least classified as important was gender, with only 5% indicating this was 'important'. The item that attracted strongest reaction against its importance was, 'it attracts attention' (68%). As discussed in Chapter Five, it is possible that these identity based results are affected by SDR.

All but one of those items attracting a majority unimportance were relational items. 'It attracts attention' elicited the least affirmative response with 68% of people indicating it was 'unimportant' or 'extremely unimportant', although 11% did feel it was 'important'. 32% of respondents thought that having a low environmental impact was 'important' but only 2% thought it was 'extremely important' and 43% thought it was neither 'important' nor 'unimportant'. Almost a quarter of respondents (23%) thought it was 'unimportant' (16%) or 'extremely unimportant' (7%). This means that the large majority of those with large-engine cars did not care about, or actively rejected, the importance of the environment in car choice.

Table 7.29 Drivers for large-engine car choice

	n =	Extremely unimportant (1)	Unimportant (2)	Neither important nor unimportant (3)	Important (4)	Extremely important (5)	Unimportant (1 or 2)	Neutral (3)	Important (4 or 5)	Mode	Median	Mean
It is reliable (functional)	43	0%	0%	2%	53%	44%	0%	2%	98%	5	5	4.4
It is comfortable (functional)	44	2%	2%	2%	64%	30%	5%	2%	93%	4	4	4.1
It makes me feel safe (functional)	44	0%	0%	9%	70%	20%	0%	9%	91%	4	4	4.0
It feels like it is well built (experiential)	44	2%	5%	9%	61%	23%	7%	9%	84%	4	4	4.0
It is spacious enough (functional)	44	0%	7%	11%	55%	27%	7%	11%	82%	4	4	4.0
It will last me a long time (functional)	44	2%	0%	18%	68%	11%	2%	18%	80%	4	4	3.9
It suits me (relational)	44	2%	2%	20%	59%	16%	5%	20%	75%	4	4	3.8
It makes me feel in control of my driving experience (experiential)	43	9%	7%	19%	53%	12%	16%	19%	65%	4	3	3.3
It is a brand I am used to (experiential)	44	7%	14%	30%	43%	7%	20%	30%	50%	4	3	3.0
It is economical (functional)	44	7%	14%	30%	32%	18%	20%	30%	50%	4	4	3.8
It suits my stage of life (functional)	43	9%	14%	28%	42%	7%	23%	28%	49%	4	3	3.1
It is exciting to drive (experiential)	44	18%	14%	20%	43%	5%	32%	20%	48%	3	3	2.8
It is fun to drive (experiential)	44	14%	14%	27%	34%	11%	27%	27%	45%	4	3	3.0
It looks good (relational)	44	9%	23%	25%	36%	7%	32%	25%	43%	4	3	3.0
It has a low environmental impact (functional)	44	7%	16%	43%	32%	2%	23%	43%	34%	4	3	3.4
It has lots of accessories and special features (functional)	44	18%	23%	30%	27%	2%	41%	30%	30%	3	3	2.6
It is suited to my household's professional status (relational)	44	18%	30%	34%	18%	0%	48%	34%	18%	3	3	2.4
It commands respect from other road users (relational)	44	23%	25%	36%	16%	0%	48%	36%	16%	3	2	2.2
It shows I am not 'one of the crowd' (relational)	44	32%	25%	27%	16%	0%	57%	27%	16%	1	2	2.2
It is suited to my household's social status (relational)	44	18%	36%	32%	14%	0%	55%	32%	14%	3	2	2.4
It is attractive to others (relational)	44	27%	27%	32%	11%	2%	55%	32%	14%	2	3	2.3
It is part of a hobby interest in cars (experiential)	44	39%	18%	30%	9%	5%	57%	30%	14%	1	2	2.0
It attracts attention (relational)	44	39%	30%	20%	11%	0%	68%	20%	11%	1	2	2.0
It indicates to others that I am financially successful (relational)	43	30%	28%	35%	7%	0%	58%	35%	7%	1	2	2.0
It reflects my gender (relational)	44	27%	27%	41%	5%	0%	55%	41%	5%	3	2	2.1

Table 7.30 Drivers for large-engine car choice by need satisfaction category

	Unimportant (1 or 2)	Neutral (3)	Important (4 or 5)
It feels like it is well built	7%	9%	84%
It makes me feel in control of my driving experience	16%	19%	65%
It is a brand I am used to	20%	30%	50%
It is exciting to drive	32%	20%	48%
It is fun to drive	27%	27%	45%
It is part of a hobby interest in cars	57%	30%	14%
Experiential Average	27%	22%	51%
It is reliable	0%	2%	98%
It is comfortable	5%	2%	93%
It makes me feel safe	0%	9%	91%
It is spacious enough	7%	11%	82%
It will last me a long time	2%	18%	80%
It is economical	20%	30%	50%
It suits my stage of life	23%	28%	49%
It has a low environmental impact	23%	43%	34%
It has lots of accessories and special features	41%	30%	30%
Functional Average	13%	19%	67%
It suits me	5%	20%	75%
It looks good	32%	25%	43%
It is suited to my household's professional status	48%	34%	18%
It commands respect from other road users	48%	36%	16%
It shows I am not 'one of the crowd'	57%	27%	16%
It is attractive to others	55%	32%	14%
It is suited to my household's social status (relational)	55%	32%	14%
It attracts attention	68%	20%	11%
It indicates to others that I am financially successful	58%	35%	7%
It reflects my gender	55%	41%	5%
Relational Average	48%	30%	22%

7.6.4.2.2 Lifestyle norms of car choice

The data reveal a split on opinion of what a normal power of car is for their income bracket (Table 7.31). Exactly half those who responded to both questions had a car that is exactly 2 litres and for these opinions is not clear on whether this is more, less or the same power as other households with a similar income. The other half of the respondents had cars that range from 2.1 to 4.2 litres and in all but one case these were seen as the same, or more powerful, than others.

Table 7.31 Normative context of the power of large-engine cars

		Power of owned car in comparison to other households on a similar income					
		Much less powerful	Less powerful	The same	More powerful	Much more powerful	Total
Engine size of preferred car	2	2	3	9	7	0	21
	2.1	0	0	1	1	1	3
	2.2	0	0	1	1	0	2
	2.3	0	0	1	0	0	1
	2.4	0	0	1	2	0	3
	2.5	0	0	1	2	0	3
	2.7	0	0	1	0	0	1
	2.8	0	0	1	0	1	2
	3	0	1	3	0	0	4
	3.8	0	0	0	1	0	1
	4.2	0	0	0	1	0	1
Total		2	4	19	15	2	42

7.6.4.2.3 Drivers of large-engine car consumption and socio-demographic and behavioural variables

Section 1 revealed a significant correlation between energy consumption from cars and higher education levels and younger respondents with larger households. The data indicate only that there was a significant negative correlation between the car providing comfort and education levels ($r_{\tau} = -.37$, $p < .01$). The only significant correlation between household size or structure and any of the items was between having a household with more 75 year olds and over, and not caring about a car that lasts a long time, which, given the limited time they may be able to drive, this is logical. A Mann Whitney U-test indicted that females were more likely be driving their large-engine car because of its low environmental impact ($U=123$, $z=-2.49$, $r=.38$, $p<.05$) and that it is economical to run ($U=208$, $z=-2.47$, $r=.37$, $p<.05$).

Contrary to expectation, space was not related to having more babies or children in the household. Although income was not correlated with any of the drivers, assets were correlated positively to three relational need satisfiers, which in general, provoked rejection from most respondents. These were that their large-engine car 'commands respect from other road users' ($r_t=.40$, $p<.01$), that it shows that the owner is 'not one of the crowd' ($r_t=.30$, $p<.01$) and that it attracts attention ($r_t=.27$, $p<.05$). This is a direct indication of a link between the possession of wealth and the purchasing of high-energy products for identity reasons. More specifically, these identity reasons are about demonstrating superior position in society in respect to others, which would be considered to be self-enhancing or extrinsic drivers.

7.6.4.2.4 Drivers of large-engine car consumption and psychological variables

Materialism showed itself to be an important driver of identity based reasons for large-engine car ownership. Not only was materialism significantly positively related to commanding respect from others on the road ($r_t=.43$, $p<.01$), attracting attention ($r_t=.34$, $p<.01$) and standing out from the crowd ($r_t=.28$, $p<.05$), but it was also strongly related to: Seeing the car as a reflection of their household's professional status ($r_t=.46$, $p<.01$); a reflection of their household's social status ($r_t=.41$, $p<.01$); the car indicating that the respondent is financially successful ($r_t=.36$, $p<.01$); the car looking good ($r_t=.30$, $p<.01$); the car reflecting gender ($r_t=.26$, $p<.01$) - this driver was not correlated to a particular gender. As well as these identity based drivers, there was also a correlation with the physical and experiential aspects of the car. The fact that the car had lots of accessories and special features was significantly connected with materialism ($r_t=.31$, $p<.01$), as was the excitement of driving the car ($r_t=.30$, $p<.05$). No correlations were found with functional items and there was a negative correlation with the importance of the car being economical ($r_t=-.24$, $p<.05$).

These correlations suggest that the experiential and relational aspects of car use are more important to materialistically oriented people than functional aspects. In terms of the other self-enhancement orientations, egoism was not significantly correlated with any drivers, but the affluent identity shared correlations with materialism and assets, in terms of commanding respect from other road users ($r_t=.24$, $p<.05$) and standing out from the crowd ($r_t=.28$, $p<.05$). Additionally, and in common with materialism, the affluent identity was connected to indicating financial success ($r_t=.31$, $p<.05$), being suited to a household's professional status ($r_t=.26$, $p<.05$); and most significantly, looking good ($r_t=.22$, $p<.01$). Furthermore, it was positively connected to the car being fun to drive ($r_t=.31$, $p<.05$).

Neither biosphericism nor altruism was significantly correlated to any drivers, including low environmental impact. Interestingly, the environmentalist identity was negatively correlated with the car being reliable ($r_t=-.32$, $p<.05$) or feeling like it is well built ($r_t=-.38$, $p<.01$). Although this may suggest a disinterest in the car, the fact that these two items are those which are functional and would improve the environmental impact of the car through longevity, are counter to this hypothesis. Environmental concern was the only variable to interact with the items in an intuitive way, being negatively correlated to the importance of the car indicating financial success ($r_t=-.28$, $p<.05$) and looking good ($r_t=-.27$, $p<.05$).

Mann Whitney U-tests for the components of environmental concern indicated that environmental protection concern was not related to any drivers, energy concern was significantly, negatively, related to the importance of the car looking good ($U=70$, $z=-2.003$, $r=.30$, $p<.05$) and climate change concern was significantly, negatively, related to the car making the respondent feel in control of their driving experience, ($U=82$, $z=-2.331$, $r=.36$, $p<.05$) and the car feeling well built ($U=95$, $z=-2.107$, $r=.32$, $p<.05$).

7.6.5 Constraints to the consumption of large-engine cars

7.6.5.1 Sample rationalisation and analysis

7.6.5.1.1 Sample rationalisation

In order to find out what is stopping respondents driving even higher-powered cars, those respondents from the full sample (n=110), who want cars that are more powerful than those they currently drive, were isolated. To determine this, those who indicated that their ideal car had the same or less power than their current car (n=61), or who didn't answer (n=6), were removed. This left a sample of 43.

7.6.5.1.2 Between group analysis

It is notable that 58% of respondents did not want a more powerful car, although 38% did want a car that is more powerful. In order to understand if there were any socio-demographic, psychological or behavioural differences between those who wanted a higher-powered car and those that did not, a Mann Whitney U-test was performed on the two groups. The results indicated that there were no significant differences between the groups on any variable. Descriptive analysis of the rationalised sample shows the average strong biospheric values and altruistic values, and weak materialistic values (Table 7.32). It should be noted, environmental concern represents a range of 0 to 3.

Table 7.32 Psychological frequency analysis of those that prefer owning a large-engine car

	Biospheric values	Altruistic values	Environmental identity	Environmental concern	Egoistic values	Materialism	Affluent identity
n =	43	43	43	43	42	41	43
Missing	0	0	0	0	1	2	0
Mean	4.11	4.12	3.02	0.5	3.21	2.46	3.30
Median	4.00	4.00	3.00	0	3.20	2.50	3.40
Mode	4.00	4.00	3.00	0.00	3.40	2.55	3.40

A Kruskal-Wallis test was also performed to see if there were any significant differences between the three original geographic samples. The results showed there were no significant differences between the samples.

7.6.5.1.3 The extent of unrestrained demand

Of the 38% that indicated they wanted a car more powerful than the large-engine car they already owned, 49% of these indicated that it would be more powerful (derived from a score of 4 out of 5), and the other 51% indicated it would be much more powerful (5 out of 5) (Table 7.33). Additionally, the results detailed in Table 7.33 reveal further information about the effect of the constraints to car choice being removed for those who want higher-powered cars. It also indicates what low-energy alternatives should provide. They are likely to be more expensive for most people and more prestigious for 79% of people. Although most respondents want their car to be bigger and newer, some respondents want smaller or older cars, which perhaps relates to classic and sports cars. A correlational analysis of the full sample confirms what table 7.33 suggests – that there are particularly strong correlations between wanting a more powerful car and a more expensive car ($r_t = -.73$, $p < .01$) and between a more powerful car and a more prestigious one ($r_t = .66$, $p < .01$). This indicates that when designing and marketing alternative lower-powered cars these features need to be considered.

Table 7.33 Features of car desirability

	n =	Much less (1)	Less (2)	Same (3)	More (4)	Much more (5)	Less (1 or 2)	Neutral (3)	More (4 or 5)	Mode	Median	Mean
Expense (less to more)	43	0%	0%	2%	35%	63%	0%	2%	98%	5	5	4.60
Power (less to more)	43	0%	0%	0%	49%	51%	0%	0%	100%	5	5	4.51
Size (smaller to bigger)	42	7%	5%	17%	38%	33%	12%	17%	71%	4	4	3.86
Age (older to newer)	42	10%	5%	21%	17%	48%	14%	21%	64%	5	4	3.88
Prestige (less to more)	42	0%	2%	19%	29%	50%	2%	19%	79%	5	4.5	4.26

Correlation coefficients were produced in order to understand if any of these preferences were linked to any psychological or socio-demographic variables. As was the case for the full sample ($n = 110$), for those who wanted more power in their car, increased education levels had a negative influence ($r_t = -.30$, $p < .05$),

in other words, those with lower levels of education wanted more powerful cars. Those with higher assets, as well as wanting more power were also more likely to want a newer car ($r_t=.34$, $p<.05$). Interestingly, although a biospheric values or environmental identity did not relate to the desired power or size of a car, these did negatively relate to prestige, with ($r_t=-.31$, $p<.05$ and $r_t=-.27$, $p<.05$ respectively). Neither materialism, nor any other self-enhancing psychological variable positively related to a desire for prestige. As prestige is a quite specific term related to self-enhancement, the results indicate that environmentally specific self-transcending orientations may, in some cases, be more reactive to the opposed self-enhancement orientation than they are a positive force for environmental consumption.

7.6.5.2 Descriptive and bivariate analysis

7.6.5.2.1 Descriptive analysis and money as a constraint

As was outlined in detail in Chapter Five, barriers to respondents obtaining their ideal car was measured through Likert-type items. Respondents were asked:

“What do you think are the main barriers to you obtaining your ideal car?. Please tick one box for each line. If you have an additional barrier please add to the last line.”

Respondents were then presented with a list of 9 items and a 5-point Likert response range (presented from left to right), with corresponding codes used in the analysis (see Appendix 4):

Strongly agree – 5

Agree – 4

Neither agree nor disagree – 3

Disagree - 2

Strongly disagree - 1

All the questions on barriers were answered by all 43 respondents. Table 7.34 shows the Likert scores' mode, median and mean for each item, re-ordered by the combined percentage total of the two agreement responses ('agree' and strongly agree'). The neutral response percentage and the negative response proportion ('disagree' and 'strongly disagree') are also reported.

Table 7.34 Constraints to higher-powered car consumption

	n=	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)	Disagree (1 or 2)	Neutral (3)	Agree (4 or 5)	Mode	Median	Mean
I don't have the money (functional)	43	9%	7%	14%	28%	42%	16%	14%	70%	Strongly agree (5)	Agree (4)	3.86
It is impractical (functional)	43	19%	28%	19%	19%	16%	47%	19%	35%	Disagree (2)	Neutral (3)	2.86
I am at the wrong stage of life (functional)	43	26%	23%	28%	14%	9%	49%	28%	23%	Neutral (3)	Neutral (3)	2.58
It wouldn't fit with my values (relational)	43	16%	19%	47%	12%	7%	35%	47%	19%	Neutral (3)	Neutral (3)	2.74
My family and friends would disapprove (relational)	43	30%	30%	28%	9%	2%	60%	28%	12%	Strongly disagree (1)	Disagree (2)	2.23
I don't have the time to consider it (functional)	43	21%	37%	33%	2%	7%	58%	33%	9%	Disagree (2)	Disagree (2)	2.37
I would feel guilty (experiential)	43	28%	21%	42%	7%	2%	49%	42%	9%	Neutral (3)	Neutral (3)	2.35
In reality I would not enjoy it (experiential)	43	44%	28%	21%	5%	2%	72%	21%	7%	Strongly disagree (1)	Disagree (2)	1.93
It wouldn't fit with my identity (relational)	43	30%	40%	30%	0%	0%	70%	30%	0%	Disagree (2)	Disagree (2)	2.00

It is apparent from the descriptive results that money is by far the biggest constraint, with 70% of people agreeing to this and 42% strongly agreeing. This is higher than the proportion of respondents stating money was a constraint to long-distance holidays (64%) and European (60%) holidays, which, given the higher cost, is to be expected. It is concerning, from an environmental perspective, that for 27% of the full sample (n =110), money is by far the biggest constraint and that with more money respondents would be likely to drive a more powerful car, and in the majority of cases, much more powerful car. However, it is not possible to gauge just how far off the required amount of money required to buy their ideal car each respondent is.

As expected, bivariate analysis showed that income and assets are significantly negatively correlated to money being seen as a constraint ($r_t = -.40$, $p < .01$ and $r_t = -.38$, $p < .01$ respectively). Additionally, households with more adults (25-59) were

more likely to see money as a constraint ($r_t=.28$, $p<.05$). The next largest constraints are practicality (35%), (a slightly higher proportion compared to long-distance holidays (31%) and European holidays (28%)), and being at the wrong stage of life (23%). The proportion of respondents feeling life stage is a constraint is much higher for cars than for holidays (European - 10%, long-distance - 8%).

Environmental constraints and psychological variables

Not fitting in with one's values was one of the items designed to test for potential environmental or altruistic constraints. Although only a minority agreed with this (19%), only 35% actively disagreed, whereas for holidays over 60% disagreed for both types of holidays. This suggests that there is a small amount of recognition from the sample that having strong biospheric and altruistic values is inconsistent with owning a high-powered car, compared to holidays. However, this is minor compared to the large majority who are indifferent to the conflict or believe it does not exist. Bivariate analysis showed that again, the environmentalist identity and materialism operate in opposition with those who are materialistic less likely to see values as a constraint ($r_t=-.25$, $p<.05$) and those with an environmentalist identity more likely to see values as a constraint ($r_t=.32$, $p<.01$). However, having an environmentalist identity was also positively connected to the more functional reasons of not having the money ($r_t=.27$, $p<.05$) and not having the time to consider it ($r_t=.30$, $p<.05$). It seems that there is an interesting relationship between not having the time to consider changing car and having an environmental orientation because it is also significantly, positively, related to having a biospheric orientation ($r_t=.28$, $p<.05$).

Although no respondent viewed family and friends disapproving as a constraint to more leisure flights, 10% saw this as a constraint to buying their ideal car. It is possible this relates to symbolic connection between high-powered cars and ostentation, which is socially undesirable, and which large numbers of holidays are not subject to. As with value conflict, this suggests that high-powered cars are more symbolically undesirable than leisure flights. All other items had under 10%

agreement. If environmental constraints were not captured in the items presented, respondents had an option of adding any additional important constraints. Here, three constraints were added (Table 7.35). One concerns waste, but the respondent did not indicate if this was a waste of money or resources.

Table 7.35 Additional constraints to higher-powered car ownership

Other reason	Likert Score
I have other priorities	-
Wasteful to change from a car that is fulfilling my current needs and is very reliable	4
Not allowed for work	5

Other findings

The final findings relate to the younger larger families, with those with more children less likely to see their ideal car not fitting in with their identity ($r_t = -.29$, $p < .05$) or feeling that they wouldn't really enjoy having it in reality ($r_t = -.32$, $p < .05$). There were no significant correlations between education levels and any of the constraints and a Fisher's Exact analysis of individual score results also did not reveal any significant findings.

7.6.5.3 Summary of drivers and constraints to large-engine car consumption

- Most people did not prefer to drive a large-engine car or want a more powerful one, although more than a third did. Those who preferred a large-engine car were more likely to have higher assets, which illuminates the positive correlation between assets and car energy use (Section 1).
- Functional needs were the most important, particularly reliability, comfort, safety, space and longevity, which suggests that these features may be symbolically connected to larger engine cars. However, experiential needs were also important overall, with being in control of driving, brand familiarity and a quality feeling car all important for a majority, and these may be more adaptable through social marketing than functional aspects.

- Although a large majority of those who prefer to own a large-engine car did not feel environmental issues are important, females are more likely to see this as important and also to be driven by it being economical to run, both of which are functional issues.
- The relationship between those with lower education levels and the desire for more powerful cars is reconfirmed although there were no insights gained as to the reason.
- As with holidays, relational need satisfiers in general, attracted a very low level of support, with only 22% on average seeing these needs as important. However, assets, as well as those with self-enhancing orientations appear to seek many different need satisfaction services from their cars. Materialism was particularly important for a wide range of relational and experiential factors with affluent identity and egoism also related to some factors. Affluent identity, materialism and assets shared correlations in terms of commanding respect from other road users and standing out from the crowd
- Most people who want a more powerful car would like it to be much more powerful and importantly this power is highly linked to other features such as prestige. This highlights the requirement to link alternative lower-powered cars with prestige or to decouple the symbolic connection between power and prestige. For a large majority of respondents it is money that is stopping higher-powered cars being bought. Adults, (therefore younger-headed households) are more likely to see this as a constraint. Lifestage is also important, and much more so than for holidays.
- Despite those who prefer to own large-engine cars or want a higher-powered car having on average high biospheric and altruistic values, these self-transcending values did not negatively influence either the preferred ownership of a large-engine car or the desire for a more powerful car. However, environmental concern and an environmentalist identity were negatively related to some of the reasons for owning the preferred car. Additionally, there was a distaste for prestige from those with biospheric and environmentalist identities, but yet not with the power of a car.

- There is further evidence that materialism and the environmentalist identity are opposed, when it comes to values, with those who are materialistic less likely to see values as a constraint and those with an environmentalist identity more likely to. However, those with a higher environmentalist identity were also being stopped from buying their ideal higher-powered car due to functional reasons.
- Household structure or lifestage did not have any notable impact on the choice of car.
- There is a strong sense of aversion to the idea that the preferred car owned is ostentatious, in that it attracts attention. This powerful socially undesirable feature could be used by social marketing to reduce the consumption of certain cars.

7.6.6 Drivers of the consumption of new durable products

7.6.6.1 Scale reliability and sample rationalisation

7.6.6.1.1 Scale reliability

The items tested were designed to be analysed individually, however, in order to assess if the items are effective at measuring drivers to the high-energy consumption of products and are therefore appropriate for future research, it is useful to assess if they operate effectively as a scale. Before analysis could occur, the scores and meaning of the three items that were presented with a low-energy emphasis were reversed. A Cronbach's Alpha was produced as well as an analysis of the effect of deleting any one item. The initial analysis showed that the reversed item 'I buy new products even if the existing ones are not broken' was negatively correlated with some items and therefore it was removed and the results reproduced. The results of the adjusted scale are shown in Table 7.36 and indicate that with the item removed the scale is reliable. Despite the issues with the item testing if products are replaced before they break, the item was retained for individual analysis because the scale level data were not used in this research.

Table 7.36 Scale reliability of product consumption drivers

Cronbach's α	.708
	Cronbach's α if item deleted
I buy new products even if used ones are available	.652
I don't buy products that have a history	.714
I am not the sort of person that buys used goods	.713
When a product breaks it is a good excuse to go shopping for a new one	.688
I am the sort of person who has up to date products	.657
I don't buy second hand products as they are normally of lower quality than new ones	.659
It is exciting to have the most up to date products	.653
It is important to have products that match each other	.687

7.6.6.1.2 Sample rationalisation

In order to analyse what was driving the high consumption of new durable products, only those respondents where adult members of their household bought at least 2 or more new durable products (including clothes) a month, were retained. This figure is a minimum number because the lowest range of the category chosen by the respondent to represent total household consumption was used to calculate a *per adult* figure. 72 (65%) did not buy this amount and one respondent did not answer, resulting in a sample of 37. It is recognised that this is a complex question for respondents, because of the range of products that are encompassed and the difficulties with estimating household consumption which therefore reduces reliability. Additionally, SDR could play a role in reducing estimates. However, the number of people who buy less than two durable products a month would appear to be encouragingly low.

7.6.6.1.3 Between group analysis

In order to test if there were any significant differences between those who had high product consumption and those that didn't, a Mann Whitney-U-test was performed. This showed that there were a large number of significant differences between the groups and that these were particularly strong for socio-demographic variables. Those with higher product consumption were much more likely to be larger households ($U=713$, $z=-4.044$, $r=.40$, $p<.01$), which is likely to reflect products bought for children, as these large households tend to have younger householders and younger respondents. This was consistent with the findings with high product consumption also related to younger respondents ($U=789$, $z=-3.712$, $r=.35$, $p<.01$) and households with more babies ($U=1019$, $z=-2.819$, $r=.27$, $p<.01$), more young adults ($U=856$, $z=-3.818$, $r=.37$, $p<.01$) and more adults ($U=907$, $z=-2.677$, $r=.26$, $p<.01$).

Also in line with previous results, a household with more 60-74 year olds was also significantly less likely to have high levels of product consumption ($U=894$, $z=-3.053$, $r=-.30$, $p<.01$). Those in the high consumption category were also more likely to have higher incomes ($U=659$, $z=-2.648$, $r=.27$, $p<.01$), to a lesser extent higher assets ($U=843$, $z=-1.977$, $r=.20$, $p<.05$) and a stronger affluent identity ($U=1013$, $z=-2.057$, $r=.20$, $p<.05$) which underlines the findings in Section 1, that wealth impacts product consumption. Lastly, there was a correlation between energy use from cars and higher product consumption ($U=1013$, $z=-2.138$, $r=.21$, $p<.05$). A Mann Whitney U-test was also performed to see if there was any significant difference in the drivers of product consumption between the groups and none were found.

The results above reconfirm the results in Section 1 which show that there was no significant difference in terms of psychological orientations, except for the affluent identity. The psychological orientation is broken down in Table 7.37, which shows high levels of biosphericism and altruism and low levels of materialism.

Table 7.37 Psychological frequency analysis of high new durable product consumers

	Biospheric values	Altruistic values	Environmental identity	Environmental concern	Egoistic values	Materialism	Affluent identity
Missing	36.0	37.0	37.0	37.0	37.0	36.0	37.0
Mean	1.0	0.0	0.0	0.0	0.0	1.0	0.0
Median	4.11	4.25	2.95	0.51	3.13	2.50	3.35
Mode	4.00	4.30	3.00	0.00	3.20	2.5	3.40
Mode	4	4	3	0	3 and 4	2	3

A Kruskal-Wallis test was also performed to see if there were any significant differences between the three original geographical samples. The results showed there were no significant differences between the samples.

7.6.6.2 Descriptive and bivariate analysis

7.6.6.2.1 Descriptive analysis

As outlined in Chapter Three, a wide variety of drivers are likely to exist for the category of new durables products (including clothes), as it is highly heterogeneous, ranging from a washing machine to an MP3 player. Therefore, the drivers considered are based on the consumption of new products over second-hand ones, as one of the most environmentally-significant product consumption choices. As the choice is dichotomous, constraints to second-hand product consumption are interpreted as drivers of the consumption of new products.

Respondents were presented with 9 items following an introductory sentence

“Please rate how far you agree with the following statements in terms of your approach to the **durable goods** and **clothes** you buy (durable goods include a range of items like washing machines, MP3 players, bags and cutlery). Although your approach may vary by product please generalise using your initial instinct. **Please tick one box for each question.**”

Each item had five options presented from left to right:

Strongly disagree - 1

Disagree - 2

Neither agree nor disagree – 3

Agree – 4

Strongly agree – 5

All respondents answered all questions. Additional answers given are presented in Table 7.38.

Table 7.38 Additional shapers of product consumption

Other reason	Likert Score
I am an advertisers nightmare! It is important to look for quality and affordability	-
I look at value for money	5
I buy used goods that meet my needs	4

Descriptive statistics were produced from the rationalised sample, to analyse what key factors were shaping this high product consumption. The results as presented in Table 7.39 show that 73% of the respondents would buy new products even if used ones were available, indicating used products are somehow seen as inferior. This proposition is somewhat explained by the fact that 41% of people indicated they feel used products are lower quality, although, a large number are neutral (32%) or disagree with this (27%). It would therefore appear that other negative factors than just low quality, are symbolically connected with used goods. For many respondents buying used products is an identity issue, with 30% agreeing that they are not the sort of person that buys used goods. A similar proportion do not buy products with history (30%).

In terms of measures of consumerism, a majority see a product breaking as a good excuse to go shopping (57%). This indicates many of the HH have a consumerist orientation, which is contrary to the low levels of materialism reported. Additionally, 30% see it as exciting to have the most up-to-date products. Three items attracted a majority disagreement and these were: buying new products even if the old ones

are not broken; being the sort of person who had up-to-date products and wanting products to match each other.

Table 7.39 Shapers of product consumption

	n=	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)	Mode	Median	Mean	Disagree (1 or 2)	Neutral (3)	Agree (4 or 5)
I buy new products even if used ones are available (meaning and scores reversed)	37	0%	8%	19%	51%	22%	4	4	3.86	8%	19%	73%
When a product breaks it is a good excuse to go shopping for a new one	37	0%	19%	24%	51%	5%	4	4	3.43	19%	24%	57%
I don't buy second hand products as they are normally of lower quality than new ones	37	8%	19%	32%	30%	11%	3	3	3.16	27%	32%	41%
I don't buy products that have a history (meaning and scores reversed)	37	0%	32%	38%	22%	8%	3	3	3.05	32%	38%	30%
I am not the sort of person that buys used goods	37	5%	38%	27%	24%	5%	2	2	2.86	43%	27%	30%
It is exciting to have the most up to date products	37	11%	30%	30%	24%	5%	2	2	2.84	41%	30%	30%
I buy new products even if the old ones are not broken (meaning and scores reversed)	37	0%	54%	19%	24%	3%	2	2	2.76	54%	19%	27%
It is important to have products that match each other	37	19%	30%	27%	22%	3%	2	2	2.59	49%	27%	24%
I am the sort of person who has up to date products	37	16%	38%	24%	16%	5%	2	2	2.57	54%	24%	22%

7.6.6.2.2 Lifestyle norms of product consumption levels

The data reveal (Table 7.40) that only at very high levels of consumption do respondents feel that they buy more than others on a similar income. About half of respondents who answered both questions consumed between 4 and 6 a month and for the majority, this was less than most people, the same was true for those who bought 7-9 products and 10-12 products. Only at 13-15 a month did no-one feel they bought less than similar others and only above 19 did a perception of greater consumption arise. However, the low levels of data points at the higher levels, make the upper boundary level unreliable.

Table 7.40 The normative context of new durable product consumption

		The number of new durable products (including clothes) compared to others on a similar income					
		I buy far fewer	I buy fewer	I buy about the same	I buy more	I buy far more	Total
Number of products current bought	4-6	5	7	6	0	0	18
	7-9	1	2	3	0	0	6
	10-12	1	3	3	0	0	7
	13-15	0	0	1	0	0	1
	16-18	0	0	2	0	0	2
	19-21	0	0	1	1	0	2
	40+	0	0	0	1	0	1
Total		7	12	16	2	0	37

7.6.6.2.3 Drivers of new durable product consumption and socio-demographic and behavioural variables

In order to understand if there were any relationships between socio-demographic, behavioural and psychological variables, bivariate analyses were performed using Kendall's Tau and Mann Whitney U-test where one variable was dichotomous. The results presented in Section 1 from the full sample (n=110) indicated that after income, the age of the respondent had the strongest relationship to actual product consumption, with younger respondents more likely to buy new products, and much more likely to want to buy more, this extended to the other related variables of larger younger household members, whereas households with fewer 60-74 year olds were less likely to consume new products and less likely to want to.

There are no significant relationships found with age, but those with more children were less likely to think it was important products matched each other ($r_{\tau} = -.43$, $p < .01$), and less likely to see it as exciting to have the most up-to-date products ($r_{\tau} = -.36$, $p < .05$). Additionally, those with larger households also thought that having matching products was less important ($r_{\tau} = -.46$, $p < .01$). These are important because products matching and getting excitement from having up-to-date products, are both positively, although fairly weakly, related with the actual level of product consumption ($r_{\tau} = .17$, $p < .05$ and $r_{\tau} = .19$, $p < .05$ respectively). Females were far more likely to agree that they don't buy products that have a

history ($U=94$, $z=-2.464$, $r=.40$, $p<.05$) and males were more likely to say they are not the sort of person that buys used goods ($U=109$, $z=-1.989$, $r=.32$, $p<.05$).

7.6.6.2.4 Drivers of new durable product consumption and psychological variables

The psychological bivariate analysis offers additional information about what structures excitement about 'newness' in products. The more excited by up-to-date products someone is, the more likely they are to be materialistic ($r_t=.33$, $p<.05$) and less likely they are to have environmental concern ($r_t=-.30$, $p<.05$). Furthermore, those who are materialistic are far more likely to want products to match, and this is highly significant ($r_t=.55$, $p<.01$). The logical notion that those who are materialistic are also more likely to demonstrate consumerist tendencies is further confirmed by the significant correlation with being the sort of person who buys up-to-date products ($r_t=.37$, $p<.01$) and buying new products, even if the old one's are not broken ($r_t=.35$, $p<.05$).

In terms of how used products are seen, those who are materialistic are more likely to see used products as lower quality ($r_t=.25$, $p<.05$) and to buy new products even if used ones are available ($r_t=.33$, $p<.05$). Materialism is not, however, related to using broken products as an excuse to go shopping. Egosim, which is another self-enhancing orientation, correlates with not being the sort of person who buys used goods ($r_t=.33$, $p<.05$). Altrusim on the other hand, is negatively correlated with perceiving used products as being of inferior quality to new ($r_t=-.28$, $p<.05$).

7.6.7 Constraints to the consumption of new durable products

7.6.7.1 Sample rationalisation and analysis

7.6.7.1.1 Sample rationalisation

In order to assess the barriers to higher product consumption, those that wanted to consume more products needed to be isolated from the full sample (n=110). The answer to the question regarding the number of products currently consumed was compared against the ideal number. Just over half of the respondents (57) did not want to consume more new durable products, leaving a sample size of 53 who did.

7.6.7.1.2 Between group analysis

Those who did not want more new durable products were compared against the group that did, to understand if there were any differences between them. The results showed that those who wanted more products varied from those that didn't in very similar ways to how those that already had high new durable product consumption practices, varied from those that did not. This is a predictable outcome given the very high correlations found in Section 1 between those who consume and those who want to consume more.

The results showed that there were a large number of significant differences between the groups and that these were particularly strong for socio-demographic variables. Those with a desire for more product consumption were much more likely to be larger households ($U=998$, $z=-2.849$, $r=.27$, $p<.01$), this result could be related to the fact the question was about household product consumption. However, as was seen in Section 1, larger households are also related to product consumption per adult, and therefore it is more likely to arise from the fact that larger households are represented by younger people and have more younger people in them.

This is, in part, supported by the fact that respondents that wanted more products were highly significantly likely to be younger ($U=662$, $z=-5.317$, $r=.51$, $p<.01$) and have households with more babies ($U=1194$, $z=-2.183$, $r=.21$, $p<.05$), more children ($U=1104$, $z=-2.471$, $r=.24$, $p<.05$) and more adults ($U=1032$, $z=-2.560$, $r=.25$, $p<.05$). Also, in line with previous results, households with more 60-74 year olds were also significantly less likely to have high levels of product consumption ($U=878$, $z=-3.998$, $r=-.39$, $p<.01$), whereas those with higher product consumption were more likely to have higher income, assets and affluent identity. These findings were not replicated here, with the only other correlation being that those who are materialistic are more likely to want more products ($U=1029$, $z=-2.242$, $r=.22$, $p<.05$).

The results suggest that, as in the previous sections, all other psychological variables are similar to those found in the full sample. Table 7.41 shows descriptive results for the rationalised sample that confirms the high average levels of biosphericism and altruism.

Table 7.41 Psychological frequency analysis of those who want more new durable products

	Biospheric values	Altruistic values	Environmental identity	Environmental concern	Egoistic values	Materialism	Affluent identity
Missing	50	52	53	53	50	52	53
Mean	3	1	0	0	3	1	0
Median	4.08	4.23	3.04	0.43	3.08	2.52	3.18
Mode	4.00	4.30	3.00	0.00	3.20	2.52	3.00
	4	4	3 and 4	0	3	2 and 3	3

A Kruskal-Wallis test was also performed to see if there were any significant differences between the three original samples. The results showed there was a significant difference ($X^2=16.19$, $p<.01$) and the mean rank scores showed that this difference was due to those from Shaldon wanting significantly less products than those from Bovey or Dawlish. This is likely to be connected to the fact that there were more households with larger numbers of 60-74 year olds in Shaldon

and that this age group has been shown to be related to a lower demand for more products.

7.6.7.1.3 Effect of unrestrained new durable product consumption

Taking the lowest number of each category option, the average uplift in new durable products bought, if all barriers were removed, is 3 a month for every adults in the house, across the sample (n=53). The sample demonstrated a large variability in desired products, with a minimum uplift of 0.5 and a maximum of 12 per adult. Additionally, the results detailed in Table 7.42 reveal that if all barriers were removed, the broader effects on sustainable consumption of products would, in general, be negative. A majority (55%) believed the number of products bought would rise, the next biggest impact would be that the number of products repaired would fall for (54%). 43% believed the number of second-hand products would fall, even though this category would include antiques, with only 6% thinking the number would rise. 38% see the number of products disposed of, increasing, Only in the category of products bought for life is there a pro-sustainability response, with 40% seeing the number increasing.

Table 7.42 The effects of unrestrained product consumption

	n =	Far Fewer (1)	Fewer (2)	Same (3)	More (4)	Many more (5)	Fewer (1 or 2)	Neutral (3)	More (4 or 5)	Mode	Median	Mean
New products purchased	53	0%	0%	45%	26%	28%	0%	45%	55%	3	4	3.83
Second hand products purchased	53	25%	19%	51%	0%	6%	43%	51%	6%	3	3	2.43
Products disposed of	53	0%	6%	57%	23%	15%	6%	57%	38%	3	3	3.47
Products repaired	52	23%	31%	38%	4%	4%	54%	38%	8%	3	2	2.35
Products bought for life	53	6%	6%	49%	23%	17%	11%	49%	40%	3	3	3.40

To assess if the desired type of consumption (for those who want more products) is related to any psychological or socio-demographic variables, correlation coefficients were produced. The results show that more materialistic respondents are significantly less likely to buy less second-hand products ($r_t = -.28$, $p < .05$) and repair products ($r_t = -.23$, $p < .05$), and those with children (aged 6 -15) are also less likely to buy second-hand products ($r_t = -.27$, $p < .05$).

The results highlight the importance of existing barriers to product consumption. The next section will analyse what these barriers might be and comment specifically on the question of what might be constraining the even higher consumption of products by younger respondents and larger, younger, households.

7.6.7.2 Descriptive and bivariate analysis

As was outlined in detail in Chapter Five, constraints to respondents purchasing their ideal number of new durable products was measured through Likert-type items. Respondents were asked:

“What are the main barriers to you buying your ideal number of new durable goods and clothes? **Please tick one box for each of the statements. If you have an additional barrier please add to the last line.**”

Respondents were then presented with a list of 9 items and a 5-point Likert response range (presented from left to right), with corresponding codes used in the analysis (see Appendix 4):

Strongly agree – 5

Agree – 4

Neither agree nor disagree – 3

Disagree - 2

Strongly disagree - 1

All the questions on barriers were answered by all respondents, bar one. Table 7.43 shows the Likert scores' mode, median and mean for each item re-ordered by the combined percentage total of the two agreement responses ('agree' and 'strongly agree'). The neutral response percentage and the negative response proportion ('disagree' and 'strongly disagree') are also reported.

Table 7.43 Constraints to increased new durable product consumption

	n =	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)	Disagree (1 or 2)	Neutral (3)	Agree (4 or 5)	Mode	Median	Mean
I don't have the money (functional)	53	2%	13%	8%	51%	26%	15%	8%	77%	4	4	3.87
I don't have the time (functional)	53	13%	28%	23%	32%	4%	42%	23%	36%	4	3	2.85
I would feel guilty (experiential)	52	23%	29%	25%	19%	4%	52%	25%	23%	2	2	2.52
It wouldn't fit with my values (relational)	53	19%	25%	36%	21%	0%	43%	36%	21%	3	3	2.58
In reality I would not enjoy it (experiential)	53	25%	30%	32%	13%	0%	55%	32%	13%	3	2	2.34
I am at the wrong stage of life (functional)	53	25%	26%	40%	9%	0%	51%	40%	9%	2	2	2.34
It is impractical (functional)	53	19%	25%	47%	8%	2%	43%	47%	9%	3	3	2.49
My family and friends would disapprove (relational)	53	32%	38%	25%	6%	0%	70%	25%	6%	2	2	2.04
It wouldn't fit with my identity (relational)	53	30%	36%	34%	0%	0%	66%	34%	0%	2	2	2.04

The results show that money is by far the biggest constraint with 77% of people seeing it as important and 26% of those seeing it as extremely important. Bivariate analysis shows that 60-75 year olds are less likely to see money as a constraint ($r_t = -.26$, $p < .05$) and households with more adults (25-59) ($r_t = .28$, $p < .05$) and females respondents were more likely to see it as a constraint ($U = 243$, $z = -2.081$, $r = .29$, $p < .05$). Time is the next biggest constraint with 36% of respondents suggesting the time spent in shops or researching products inhibits what would otherwise be a greater consumption level. Interestingly, although no more than 9% of those who wanted more holidays by air, or higher-powered cars, said they would feel guilty at having what they wanted, 23% of those who wanted more products thought that the likelihood they would feeling guilty is stopping them. This suggests a symbolic connection between products and guilt that is much stronger than in the other ESC categories looked at here, although still low overall considering the very high levels of disagreement with family and friend disapproving (70%).

Females were far more likely to believe that the likelihood of feeling guilty is stopping them buying their ideal number of new durable products ($U = 194$, $z = -2.696$, $r = .37$, $p < .01$). Those who take more European holidays are less likely to

say they would feel guilty at buying more products ($r_t = -.25$, $p < .05$). Additionally, 21% said it would not fit with their values, again higher than the proportional response in the other ESC categories.

Those who are more materialistic ($r_t = -.26$, $p < .05$), or who have a stronger sense of affluent identity ($r_t = -.22$, $p < .05$), were less likely to say their values were a constraint. The sense that having more products would not actually be enjoyable was agreed with by 13%, which is more than double the proportion of agreement with the other high-energy consumption practices. This indicates a keener sense of negative return on enjoyment with products than with cars or holidays. Those with stronger egoistic values were less likely to agree that lack of enjoyment is a constraint ($r_t = -.26$, $p < .05$).

Stage of life and practicality was important for very few people (9% and 11% respectively), although bivariate analysis showed that those with more babies in the household are more likely to see their stage of life as a constraint to buying more products ($r_t = .33$, $p < .05$), and female respondents were also more likely to agree with this ($U = 234$, $z = -2.174$, $r = .30$, $p < .05$), as well as impracticality being a constraint ($U = 238$, $z = -2.135$, $r = .29$, $p < .05$). 60-75 year olds were less likely to see this as a constraint ($r_t = -.30$, $p < .05$). The disapproval of significant others, or a lack of identity fit, were both disagreed with by a large majority.

Interestingly, 60-75 year olds were less likely to feel that buying their ideal number of products would not fit with their identity ($r_t = -.26$, $p < .05$), which somewhat dispels the hypothesis that their upbringing in a time of austerity may be restraining their demand for more products. However, as this analysis is limited to a sample of those who want more products and there is an issue over how the term identity is interpreted, the context of their upbringing may still be relevant.

7.6.7.3 Summary of drivers and constraints to new durable product consumption analysis

- With one item removed, the scale appears reliable as a measure of environmental aspects of consumption – as they relate to consumerist tendencies and perspectives on used goods.
- The self reported number of new durable products bought was low, with only 35% buying two or more per adult per month. However this figure may related to issues of interpretation of the question or from SDR effects.
- Nearly all those who bought two or more new products a month each feel they buy the same or less than similar others. Only at very high levels of consumption, (19 and above a month per person), do respondents feel that they buy more than others on a similar income.
- The results from Section 1 indicate a ‘culture’ of consumerism, where buying more products is connected to wanting more, particularly for the younger households. This was reinforced in this section because those who bought more products and wanted more products, were similarly different to those who did not buy or want more products.
- As revealed in Section 1, those that consume more products and want more products are more likely to be younger people with larger households with younger members and less likely to be 60-75 year olds. Interestingly, those that buy more products are not more likely to be materialistic, but materialism is important when it comes to desiring more products.
- The second key factor in product consumption is wealth, in terms of both income and assets, and an affluent identity, are reconfirmed, with all three related to consuming a high number of new durable products, but not desiring more products. Additionally, those from the Shaldon area were less likely to want more products, which is likely to be related to their greater number of Baby Boomer households.
- Those who consume more than two products a month have similarly high levels of biosphericism and altruism and low levels of materialism, affirming the results of Section 1, that these do not impact on actual product consumption levels.

The affluent identity was not significantly an influencing factor, despite the indication in Section 1 that it was.

- Although materialism is not connected to actual product consumption, it is highly connected to many of the consumerist drivers that promote new product consumption.
- A majority of people (57%) do not wait for an old product to break before buying a new one and a majority feel that if an old product does break it is often a happy event that is used as an excuse for shopping (only 19% disagree). This suggests a culture within this sample that does not overly support mending products. The connection between altruism and not seeing second-hand products as inferior in quality to new products, may reflect the likely connection between altruism and charity shop purchasing.
- Believing products should match and getting excited about having the most up-to-date products are also important as they are both connected to actual product consumption levels. In turn, these are both aspects that are strongly connected with materialism and negatively related to having children. What underlies these differences is important.
- A large majority of people would not buy a used product over a new one. This appears to be due to issues of quality but also issues of identity with a third of high product-consuming respondents seeing themselves as not the sort of person who buys used goods.
- If the all barriers to products consumption were removed, the biggest impact would be more new products bought, which is relevant for a majority with the second biggest impact being fewer product repaired.
- The sense that having more products would not actually be enjoyable was agreed with by 13% which is more than double the proportion of agreement with the other ESC categories. This indicates a keener sense of negative return on enjoyment with products than with cars or holidays, although still not high.
- 23% of those who wanted more products thought that the likelihood they would feeling guilty is stopping them, much more than for the other ESC categories.

This suggests a symbolic connection between products and guilt that is much stronger than in other ESC.

- Environmental concern presents itself as most opposed to materialism, rather than an environmentalist identity, which took this role for leisure flights and large-engine cars.
- Money is the only constraint that is agreed with by a majority. Interestingly, guilt and lack of fit with values, is agreed with by almost a quarter. These factors are not related to self-transcendent orientations though, with only females related to guilt.
- 60-75 year olds were less likely to feel that buying their ideal number of products would not fit with their identity ($r_{\tau} = -.26$, $p < .05$), which somewhat dispels the hypothesis that their upbringing may be restraining their demand for more products.
- Females are less likely to buy products with a history and males less likely to see themselves as not the kind of person that buys used goods, and having children is connected to not buying second-hand.
- Product and car consumption are reconfirmed as being connected and, additionally, those who take more European holidays are less likely to feel guilty about buying more products.

7.7 SECTION 3 - The potential influence of Global Action Plan programmes on higher income participants

7.7.1 Data transformation and approach

Objective Three of this research is to gather insights into the differences between those HHH who have completed a community-based social marketing programme with GAP, and those who have not. As a sample of 9 is too small for most statistical tests, analysis has been restricted to descriptive results on a sample and case-by case-basis. Additionally, Mann Whitney U-tests were performed, as they are suitable for small samples. No minimum sample size could be found to exist for this test. Furthermore, as discussed in Sections 1 and 2, most of the data are interval.

Due to the small sample and the limited number of statistical analyses that can be performed, the data will be analysed against the general sample and also in relations to each geographic sample (Bovey, Shaldon and Dawlish), in order to present as rich an analysis as possible.

Before analysis, all the relevant adjustments to the data that were performed on the general sample, i.e. sums and means of scales, conversion of behaviour to kWh per adult and reversal of scales, were performed on the GAP sample.

7.7.2 Socio-demographics

The socio-demographics had a number of powerful relationships with energy use behaviour in the analysis performed in Sections 1 and 2. Therefore it was useful to understand how the GAP sample might be different to the general population, before moving on to psychological and behavioural analysis. Against the general sample, a Kruskal-Wallis test showed that there was only one significant difference and that was in terms of assets ($U=187$, $z=-2.934$, $r=.28$, $p<.01$). At an individual geographic sample level, Mann Whitney U-tests confirmed that the GAP sample had significantly lower assets than all the areas, the biggest difference was with

Shaldon ($U=17$, $z=-3.241$, $r=.68$, $p<.01$), followed by Bovey ($U=82$, $z=-2.472$, $r=.36$, $p<.01$) and Dawlish ($U=89$, $z=-2.662$, $r=.37$, $p<.01$).

7.7.3 Psychological variables

7.7.3.1 Descriptive analysis

Table 7.44 presents the descriptive results of values, materialism, identity and environmental concern constructs for the GAP respondents. All respondents demonstrated a biospheric and altruistic orientation, and the mean for the group was high for both values (4.4 and 4.3 respectively), this was just slightly higher than for the general sample (4.2 mean for those with a positive orientation for both values). A large majority of respondents were materialistic (78%) with a smaller proportion egoistic (67%), this was much higher for both scores than for the general population, where 48% were egoistic and only 9% materialistic. For those that held the value, the mean scores for the GAP sample were slightly lower for egoism (3.2 compared to 3.5) and slightly higher for materialism (3.5 compared to 3.2). The commitment to being an environmentalist, although higher than for the general sample (3.0) is still quite low.

Table 7.44 Frequency analysis of values and identity for the GAP sample and the general sample

GAP sample

	Number of items in scale	Number of options	n =	Median	Mode	Mean	Standard Deviation	Minimum Mean	Maximum Mean	Percentage with a positive orientation	Percentage without a positive orientation	Mean of those with positive orientation
Values												
Biosphericism	4	5	9	4.5	4.0	4.4	0.5	3	5	100	0	4.4
Altrusim	4	5	9	4.3	4.0	4.3	0.5	2	5	100	0	4.3
Egoism	5	5	9	3.4	3.4	3.1	0.6	1.6	4.6	67	33	3.2
Materialism	20	5	9	2.6	2.0	2.6	0.5	1	3.5	78	22	3.5
Identity												
Affluent	5	5	9	3.4	3.4	3.1	0.6	1.2	5	67	33	3.3
Environmentalism	5	5	9	3.2	3.2	3.4	0.6	1.2	5	56	44	3.5

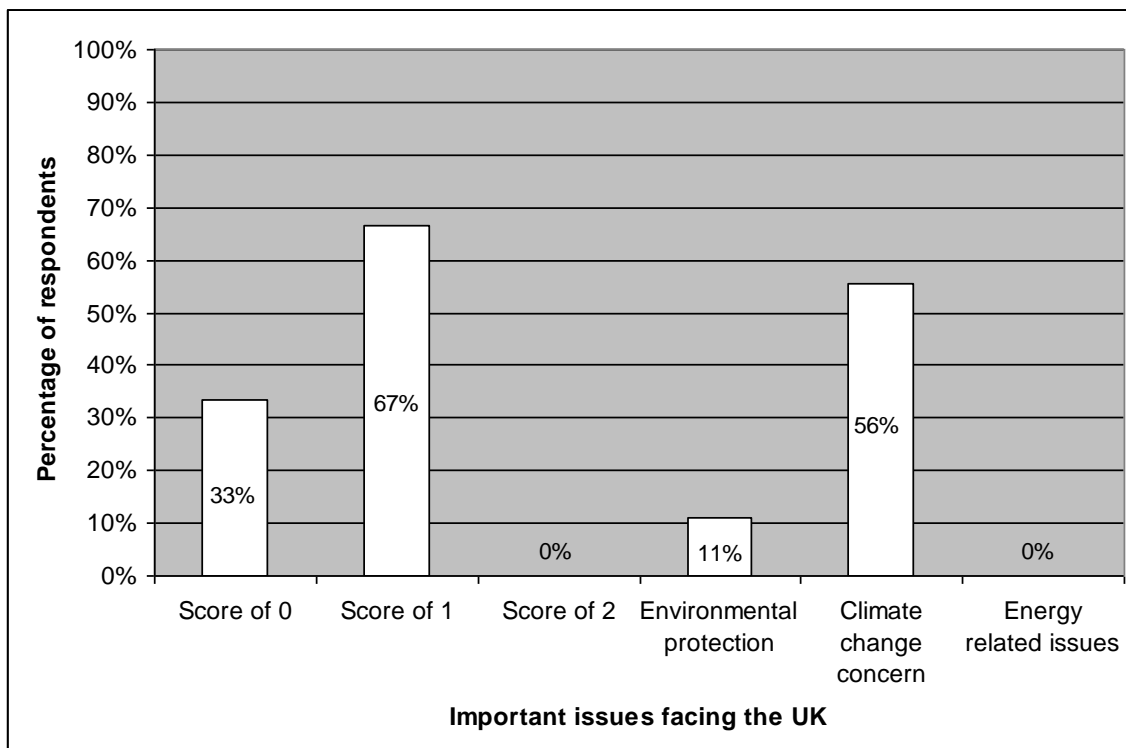
General sample

	Number of items in scale	Number of options	n =	Median	Mode	Mean	Standard deviation of the mean	Minimum mean	Maximum mean	Percentage with a positive orientation	Percentage without a positive orientation	Mean of those with positive orientation
Values												
Biosphericism	4	5	107	4	4	4.1	0.5	3	5	96	4	4.2
Altruism	4	5	109	4.3	4	4.2	0.5	2	5	99	1	4.2
Egoism	5	5	106	3	3	3.1	0.6	1.6	4.6	48	52	3.5
Materialism	20	5	105	2.45	3	2.4	0.5	1	3.5	9	91	3.2
Identity												
Affluent	5	5	106	3	3	3.2	0.6	1.2	5	54	46	3.6
Environmental	5	5	109	3.2	3	3.0	0.6	1.2	5	43	57	3.5

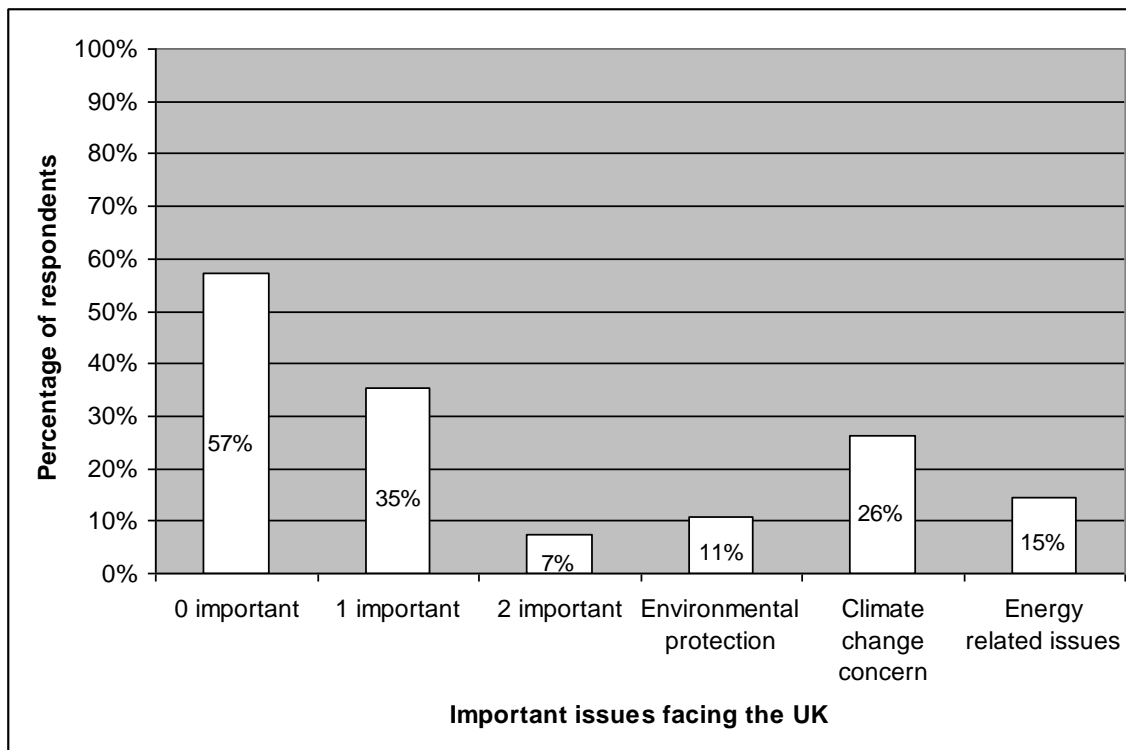
As environmental concern was measured by asking people from a list of 14 items which two they thought were most important for the UK. The results are presented in the graph below (Figure 7.13).

Figure 7.12 Environmental concern and its components' scores for the GAP sample and the general sample

GAP sample



General sample



The results show that climate change concern is one of the top two issues for just over half of the respondents (5 out of the 9). This was more frequently supported than any other factor, with the next most frequently cited issue being the economic situation. Environmental protection was seen as a top two issue for just one person, and energy concern was not a major issue for anyone. Nobody had two environmental concern factors as their top two issues.

7.7.3.2 Bivariate analysis

7.7.3.2.1 Value and identity conflicts

Mann Whitney U-tests showed that there was a significant difference in identity conflict ($U=337$, $z=-2.089$, $r=.19$, $p<.05$) and values conflict ($U=289$, $z=-2.391$, $r=.22$, $p<.05$) between the higher-income GAP sample and the higher-income general sample. In order to investigate if there was any difference by geographic sample, a series of further tests were performed on each sample. The results showed that the GAP participants had higher levels of identity conflict (where both an environmental and an affluent identity are held) to those from both Dawlish

($U=132$, $z=-2.529$, $r=.33$, $p<.05$) and Bovey ($U=133$, $z=-1.973$, $r=.27$, $p<.05$), but not in comparison to Shaldon. Additionally, GAP had a strongly significant higher value conflict than Dawlish ($U=101$, $z=-2.94$, $r=.39$, $p<.01$).

In terms of values, the means and frequency scores of values held by GAP participants (Table 7.45) shows that this conflict comes from the large proportion of respondents that hold both self-transcending and both self-enhancing values (6 out of 9). In all cases both self-transcending values were held, and held more strongly than the self-enhancing value. However, only two people did not hold a self-enhancing value and therefore demonstrated value coherence, whereas for the general sample, 49% of people had value coherence where either self-transcending or self-enhancing values were held, or neither. Additionally, whereas only 5% of the general sample held all four values, for GAP, 78% of respondents held all four.

Table 7.45 Value conflict analysis for GAP participants

Self-transcending values					Self-enhancing values				
Biosphericism Mean	Held? (0=no, 1=yes)	Altruism	Held? (0=no, 1=yes)	Number of values held	Egoism	Held? (0=no, 1=yes)	Materialism	Held? (0=no, 1=yes)	Number of values held
4.8	1	4.5	1	2	3.4	1	3.3	1	2
4.0	1	4.0	1	2	2.6	0	2.6	0	0
4.5	1	4.0	1	2	3.2	1	4.3	1	2
4.0	1	3.8	1	2	3.4	1	3.3	1	2
4.8	1	4.3	1	2	3.6	1	3.4	1	2
4.5	1	3.5	1	2	3.0	0	2.9	0	0
5.0	1	5.0	1	2	1.8	0	3.6	1	1
5.0	1	5.0	1	2	3.6	1	3.2	1	2
3.5	1	4.5	1	2	3.4	1	3.4	1	2

For identity, Table 7.46 illustrates how 5 of the 9 participants have identity conflicts. In all cases where a conflict occurs, the environmentalist identity is held more strongly than the affluent identity, but only by a small margin.

Table 7.46 Identity conflict analysis for GAP participants

Environmental Identity		Affluent Identity Mean		Number of identities held
Mean	Held? (0=no, 1=yes)	Mean	Held? (0=no, 1=yes)	
3.4	1	3.2	1	2
3.4	1	3.2	1	2
2.6	0	2.6	0	0
3.4	1	3.4	1	2
3.0	0	3.2	1	1
3.0	0	2.6	0	0
3.6	1	3.4	1	2
3.6	1	3.2	1	2
2.2	0	2.8	0	0

7.7.3.2.2 Psychological orientations

Those from GAP had significantly higher levels of climate change concern compared to both Shaldon ($U=50$, $z=-2.047$, $r=.39$, $p<.05$), and to a lesser extent Dawlish ($U=141$, $z=-2.152$, $r=.29$, $p<.05$), however, not compared to Bovey. As Bovey is a place with well organised environmental grass roots movement, with Dawlish having some external intervention and Shaldon having not known environmental movements these results reflect this relative position. This supports the original assessment that there is a difference in environmental grass root activity in the three locations, but as the analysis in Section 1 before the sample merger showed, this was not statistically significant when the three sample were compared.

However, when GAP participants, who would be expected to have the highest environmental orientation of all the samples, are compared to the three samples, the differences between GAP participants and people from the other areas is apparent. Obviously this is a very small sample, but the results are an encouraging indication that those who went through the EcoTeam programme have a relatively high concern about climate change. However, broader environmental protection issues and energy concern do not show similar results, which may suggest these aspects are not being focused on in the EcoTeam programme.

7.7.4 Energy use

7.7.4.1 Descriptive analysis

As Table 7.47 shows that GAP participants have a lower energy consumption in all categories, with the biggest mean difference being for long-distance holidays, where a 2.4% difference was found. However, this represents only a small difference. GAP participants still use an average of approximately 6.5 tonnes of CO₂ across the four ESC categories. Although these categories represent some of the largest contributors to energy consumption, particularly direct energy consumption, they do not include indirect energy embedded in products, particularly food, or other services provided by government. As the focus of the EcoTeam programme was water, energy and waste, it would have been expected that the fuel consumption of the participants would be significantly lower, however, this was not the case. Furthermore, out of the 9 respondents, 2 take a regular long-distance holiday by plane a year, and 5 take a European holiday by air every year, which means there is scope for focusing on reducing this type of energy use.

Table 7.47 Energy consumption comparison between GAP and the general sample

	Aggregate tonnes carbon dioxide			Aggregate energy consumption kWh		
	GAP	General Sample	% difference	GAP	General Sample	% difference
Mean	6.5	6.9	1	18,040	22,853	1
Median	6.8	5.5		19,648	18,577	
Min	2.6	0.6		9,580	999	
Max	10.4	11.7		25,397	43,517	

	Long distance leisure flights kWh per adult			European leisure flights kWh per adult		
	GAP	General Sample	% difference	GAP	General Sample	% difference
Mean	1,419	3,398	2	1,199	1,136	1
Median	0	3,193		1,348	1,348	
Min	0	0		0	0	
Max	6,385	12,770		5,398	5,391	

	Car energy use per adult kWh			Household fuel per adult kWh		
	GAP	General Sample	% difference	GAP	General Sample	% difference
Mean	8,758	13,567	2	6,664	7,806	1
Median	6,686	7,237		6,643	8,313	
Min	2,330	2,581		3,192	0	
Max	21,407	19,824		13,300	15,960	

7.7.4.2 Bivariate analysis

None of the differences proved to be significant when the differences between GAP and the general sample were tested using Mann Whitney U-tests. In terms of energy use, there was only one difference with the geographic samples and that was that the GAP sample take significantly fewer long-distance holidays than those from Shaldon ($U=45$, $z=-2.012$, $r=.39$, $p<.05$). This could be connected to the lower levels of grass root environmentalism, but could be connected to the lower income and assets that the GAP participants have, compared to those from Shaldon, although at these higher income levels, wealth has been shown in this study not to significantly impact on consumption of leisure flights (Table 7.13).

The small sample, and the lack of statistical significance, mean not much can be drawn from these findings, but they do, at least, indicate that GAP HH are behaving in a slightly less impactful way than the general population, but not as much as one might expect. In terms of desire for higher energy consumption, only one GAP participant's ideal car would be more powerful which is 11% compared to 25% for the total. This difference is not statistically significant, however, the age of car that the GAP sample would buy is significant, with most people wanting a much older car. Four GAP participants would like more long-distance holidays. The most important constraints to long-distance holiday-taking were time and money. For European holidays, three people who took these holidays by air wanted more. The same pattern of constraints was present as for long-distance holidays, with the same person being the only one to say they would feel guilty and it would not fit with their values. Perhaps more importantly, no one feels that their family and friends would disapprove, with two people actively disagreeing to this.

Six people would not buy any more products, this represents 67% and is higher than for the general sample (49%). One already bought 2.3 new durable products a month per adult, three bought 2 and the other two a very small half a product, on average. However, the three people that did want more wanted a large number more. One wanted to increase from 0.5 to 2 per adult, one from 0.5 to 5 and one from 4.3 to 9.3. This shows a diversity in increased product consumption desire. For these three people the constraints that were most important were money, impracticality and, that it wouldn't fit with their values. It is unclear if this relates to environmental reasons or possibly reasons related to profligacy or ostentation.

A Mann Whitney U-test was performed on those items that shape product consumption and this indicated that the GAP respondents were significantly less likely to agree that they don't buy second-hand products because they are of lower quality ($U=138$, $z=-3.706$, $r=.34$, $p<.01$), and also less likely to see it as exciting to have the most up-to-date products ($U=295$, $z=-2.097$, $r=.19$, $p<.05$). This last result is particularly important as this item was shown to be related to the overall product consumption in the general sample.

7.7.5 Conclusions

The range of differences presented above highlights some features of the small sample of GAP participants. It suggests strongly that climate change concern is specifically high in the GAP participants, but it also indicates that other than in those cases, there are no significantly enhanced environmental psychological orientations or energy consumption behaviour. Although the energy consumption of GAP participants are on average lower than for the general sample, this is not by much, and it is possible that the effects of the lower assets of the GAP sample could account for this. It would be expected, that as the Small Change EcoTeam programme focuses on energy and waste that household fuel would be much lower, but it is not. The GAP sample still emit, on average, about 6.5 tonnes per adult through their consumption across holidays, cars and household fuel. As the sustainable goal many people cite is 1 tonne, this figure is high.

The GAP sample have a more positive approach to the quality of second-hand goods and do not see up-to-date products as very exciting, both of which are important factors in relation to sustainable consumption. However, there is very little evidence that GAP participants have a greater level of value, identity, guilt or normative pressures to consuming at an even higher level, which may have been expected

It is not possible to make any certain conclusions from such a small data set, however, it is possible to conclude in general terms that, although the higher-income GAP respondents may feel more concerned about climate change compared to the general higher-income population, this does not appear to translate, in general terms, into consumption habits or constraints to consumption.

7.8 Conclusions of the chapter

This chapter presented the results of the quantitative analysis, which is the primary means of fulfilling the three main objectives of this research. The analysis of the theoretical constructs revealed that there is a distinct split between self-transcending and self-enhancing orientations, and that materialism appears to be particularly important in negotiating the split. However, as materialism is a value only held by 9% of the sample, its actual effects on this sample are likely to be minimal. The powerful role of materialism was reinforced in part two of this section which looked at drivers and constraints. Materialism was particularly important at shaping the consumption of products and cars.

These two physical ESC categories were connected not just by materialism, and the significant relationship in consumption between them, but also by the types of people who had high-energy consumption in these categories and high desire to increase their energy consumption. These tended to be younger respondents and larger, younger, households and were less likely to be those, who have been referred to in this study as 60-74 year olds. On the other hand, long-distance and European leisure flights taken were also statistically related, and 60-75 year olds were more likely to consume both of these with younger larger households less likely to. Therefore socio-demographics have shown themselves to be important shapers of consumption of higher-income groups.

Income and assets were confirmed as being very important for driving energy consumption at an aggregate level, but when looking at the category level, their effects were only present in relation to the physical consumption practices of cars and products (and also household fuel), but not holidays.

Although income was the variable that this study set out to investigate, the results suggest that perhaps assets are a more useful measure, which appears to operate differently in respect to energy use. Assets were connected to an affluent identity, materialism and a values conflict whereas income was not related to any psychological variables.

The affluent and environmentalist identities were initially established by the results to be an important contribution to analysing sustainable consumption. On a number of occasions, the environmentalist identity scale was shown to shape consumption where values did not. For leisure flights and cars it directly opposed materialism in terms of values as a constraint to greater consumption. The affluent identity also contributed some useful insights and was particularly related to gender and assets.

Environmental concern as reinterpreted for this study, and its components, also proved important for some areas of energy consumption. The approach draws from previous examples, but taking a marked shift from the NEP. The results confirm that environmental concern has a number of related dimensions which are not expressed in the NEP. Additionally, it is argued that the approach used in this research is less likely to evoke SDR.

The results showed large value-action gaps for the sample where high average biosphericism was present, and yet this did not relate to actual consumption or the potential drivers or constraints that would be expected to clash with such a value. There were cases where biosphericism had a relationship with a variable but this was rare, and not in relation to actual or desired consumption, or the importance of consumption practices. Specifically, it did not relate to any value-based constraints to higher consumption.

Additionally, a key surprising result was the positive role that altruistic values played in long-distance leisure flights. This was partially explained by the large number of areas of need satisfaction connected to altruism. Therefore, focusing on the segments of 60-75 year olds and altruistic people are two potential key strategies for reducing long-distance holiday consumption by HIH. Additionally, both groups seemed to use these holidays for stimulation and interaction (i.e. experiential reasons) and not for functional reasons. This fits entirely with the finding that long-distance holidays are used mainly for experiential need

satisfaction, whereas European holidays are used functionally to reduce stress, relieve boredom and to carve out time with loved ones.

60-75 year olds are also more likely to take European holidays, and in fact, younger larger households, particularly with infants, are less likely to take leisure flights. Because European holidays and long-distance holidays fulfil different need satisfaction services, it is feasible that a complementary social marketing strategy would attempt to shift long-distance to European holidays by emphasising the stimulating aspects of such holidays. At the same time UK holidays should be developed as places of relaxation and routine breaking for those who currently connect this with European holidays.

For the categories of holidays and cars, it appears that the use of experiential, functional and relational need satisfiers is a valid way of organising drivers, with the categories not only producing good alphas but also following through conceptually in the results. Additionally, the scale created to test the ESC practices in terms of consumerism and approach to second-hand goods, is also initially validated. Finally, the result that 'buying products that match each other' and finding up-to-date products 'exciting' are both related to actual new durable product consumption, is potentially important.

CHAPTER EIGHT

Discussions and conclusions

8 DISCUSSION AND CONCLUSIONS

8.1 Introduction to the chapter

This chapter will outline the implications of the research results, in the context of the theoretical basis of the thesis, as outlined in Chapter One and Four, and the relevant research, as detailed in Chapters Two and Three. This thesis provides a range of key contributions to the academic debates. At a macro level, the use of a postmodern approach to consumption provides a way to transcend debates about role of marketing versus the role of psychological orientations in positively influencing sustainable consumption. If it is assumed that there is a dialectic relationship between the two areas then both are important and both must be considered in order to effectively guide consumption cultures and behaviours. The thesis also advances what is known presently about the role of key environmentally significant psychological orientations in guiding behaviour and particularly ESC behaviour, rather than pro-environmental behaviour. Most prominently is the verification of the importance of considering psychological orientations at the behavioural level rather than an assumed transference of the influence of these inclinations across behaviours. Additionally, the results strongly support the existence of two distinct spheres of psychological orientations, which have in past literature been termed self-transcendence and self-enhancement spheres. As well as corroborating these spheres, the results indicate that the affluent identity, environmentalist identity and environmental concern (as defined here as comprising three areas of concern), add to understanding about these two spheres in distinct and significant ways. This thesis also adds to the sparse understanding of the nature and drivers of ESC by HH, something which, as this thesis has emphasised, is critical for understanding how we might reduce the critical environmental and social impacts of consumption

The chapter will focus on the quantitative results using relevant supporting data from the qualitative results, where this usefully adds to the analysis. The chapter will be organised into four main sections reflecting the three objectives of the research, followed by a summary section.

Objective One is: To identify the key environmentally-significant psychological orientations and socio-demographics of higher-income householders and how these relate to a selection of environmentally-significant consumption behaviours. Section 1 will therefore consider the key psychological orientations that may be influencing the high-energy consumption of HIH. The section will begin by summarising the inter-connections between the constructs, drawing from the result summaries in Chapter Seven, and consider how these relate to existing research. It will then consider the psychological variables, examining what they indicate about HIH consumption. The results have indicated that psychological orientations have little significant relationship with the consumption of leisure flights, large-engine cars or new durable products. The chapter reviews this and then focuses on materialism and altruism, which were connected to consumption in various ways. A number of other important theoretical and practitioner focused insights were gained by this research and the first section of this concluding chapter will consider the implications of these. Additionally, this section will discuss the role of wealth, particularly assets, which although not a psychological orientation, merits particular consideration as a central feature of the research,

Objective Two is: To provide insights into the needs-based drivers and constraints for higher-income householders in respect to a selection of environmentally-significant consumption behaviours. As such, Section 2 of this chapter will consider what the data reveals about potential social marketing approaches for HIH, utilising the driver and constraint results. A behavioural focus, which is central to social marketing and therefore practitioners, will be taken, with long-distance and European leisure flights, large-engine cars and new durable products considered in turn. Drawing from the approach outlined in Chapter Four, the section will integrate the psychological and socio-demographic data along with the need satisfaction driver and constraint results, to arrive at implications for behavioural interventions and future research. As well as indicating what need satisfaction is perceived to underpin certain ESC, the results suggest that there are important differences in the types of HIH that partake in different consumption behaviours, in

terms of socio-demographics and psychological orientations. The types of need satisfaction gained by different ESC, is also shown to differ by particular socio-demographics and psychological orientation.

Objective Three is: To explore the differences between participants in a specific Global Action Plan household campaign and the general higher-income population. Section 3 will therefore consider the comparison of the GAP respondents to the general sample. As EcoTeams is a form of social marketing it is useful to consider the implications of the findings discussed in Section 1 and 2 and what they might imply for an EcoTeam programme or similar practitioner implemented intervention designed for HH.

Finally, Section 4 will conclude both the chapter and the thesis as a whole. It will summarise the contributions this thesis has made to theory, practice and future research agendas. The limitations of the research will be outlined and potential future research projects will be considered.

8.2 SECTION 1 – Key psychological orientation findings

This section will summarise the implications of the results regarding environmentally-significant psychological orientations. Although comparison with a number of previous studies, detailed in Chapter Two, will be made, two studies will be particularly referred to. Firstly, De Groot and Steg (2008), who report on a number of empirical studies of environmentally relevant values in relation to environmentally related behaviour. Secondly, Gatersleben et al. (2009), as rare example where values, materialism and a measure of environmental concern together are considered together. Additionally, they put a focus on environmentally significant, rather than pro-environmental, behaviour.

8.2.1 Inter-relationship between psychological constructs

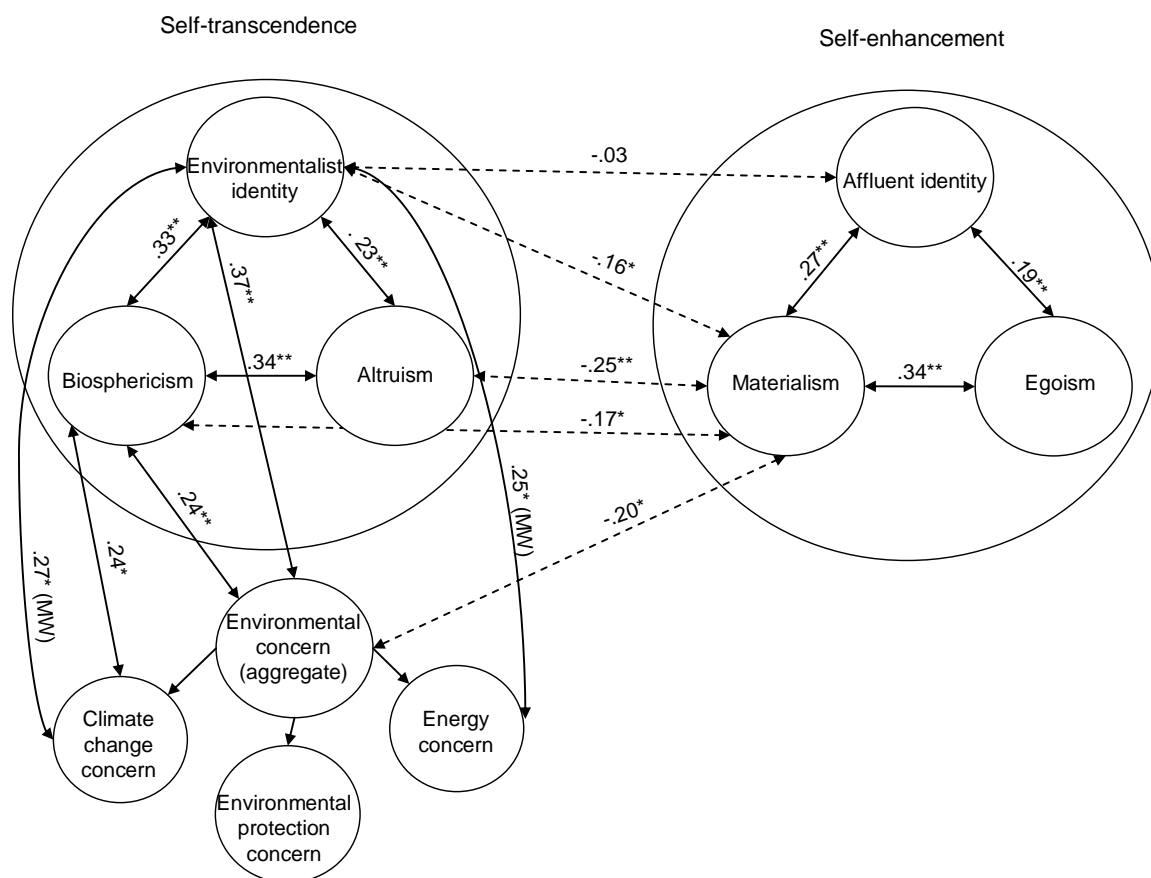
As outlined in Section 2.1.1.3.1, although previous research suggests that biospheric and altruistic values are related to each other (as self-transcendence values) and egoism (as a self-enhancement value) is opposed to biospheric and altruistic values (Schultz and Zelezny, 1999, 2003; Schultz, 2001), few studies report inter-correlations between the values. Even fewer consider how additional self-enhancement or self-transcendence values inter-relate (Gatersleben et al. 2009). This present research, as detailed in Section 8.5.2.5 and in Figure 8.1 has shown that, for the H1H sample, the constructs cluster as hypothesised.

Biosphericism and altruism are significantly positively related ($r_t=.34$, $p<.01$), but not overly so as to suggest they are not distinct constructs. The relationship between these two variables was found to be weaker than by De Groot and Steg (2008) ($r=.48$, $p<.01$) and Gatersleben et al. (2009) ($r=.46$, $p<.01$), which may be influenced by the fact that references to environmental issues were minimised, thereby reducing SDR.

The negative correlations between materialism, and both the environmentalist identity and biosphericism, are similar to the findings between environmentalism and materialism ($r=-.20$, $p<.01$) found by Banerjee and McKeage (1994), but different to Gatersleben et al. (2009) who found no significant relationship between

materialism and biosphericism. As with Gatersleben et al., a positive correlation was found between materialism and egoism.

Figure 8.1 The correlations between psychological orientation variables



Source: Author

Reflecting Gatersleben et al.'s findings, no negative relationship was found between egoism and either biosphericism or altruism, although De Groot and Steg did find egoism to be negatively related to biosphericism ($r = -.24$, $p < .05$). Additionally, no negative relationship was found between the affluent identity and any of the self-transcendence values. In fact, only materialism was negatively related to any (and all) or the self-enhancing values, although not particularly strongly. This suggests that materialism is a particularly important structuring force for environmentally-significant values. Gatersleben et al. (2009), for example, found a similar level of negative correlation between environmental concern and

materialism ($r=-.20$), although, in their study, environmental concern was measured using the NEP. This supports Gatersleben et al. (2009) assertion that, although materialism and environmental values or concern are rarely studied together, where they are, similar small negative correlations have been found.

The lack of negative correlations, other than with materialism, along with the high levels of orientation 'conflicts' found, suggest that self-enhancing and self-transcending orientations are not necessarily incompatible and therefore it is possible they are held simultaneously. Therefore it is unclear if the term 'conflicts' is most appropriate and further research into how self-enhancing and self-transcending orientations operate together, to affect ESC behaviour is required. Where materialism is held at the same time as a self-transcendence value however, this could be considered a psychological orientation conflict, which may have implications for levels of wellbeing, as the holding of incompatible values is deemed to result in high levels of psychological tension, (Schwartz, 1994) as empirically supported by Burroughs and Rindfleisch (2002) who specifically considered conflicts with materialism.

Although cross-cultural values research, using inter-correlations and structural analysis, suggests that self-enhancing values and self-transcendence values are incompatible (Schwartz and Bilsky, 1990), theoretically, both types of a value spectrum can be held at once (Schultz and Zelezny, 2003) More specific research into how frequently these values are held simultaneously, is less common (Gatersleben et al. 2009). This study has shown that for the sample, 51% of respondents hold both a self-transcending and a self-enhancing value simultaneously, therefore more respondents than those who hold either one or the other (48%) (Table 7.7). Additionally, in all but one case, where materialism is held, a self-transcending value is also held.

These are higher frequencies than found by Gatersleben et al (2009) who, although demarcating high and low values around the group mean, showed that 29% of respondents held both materialistic values and environmental concern. This

study found that fewer people held both the affluent (self-enhancing) and environmentalist (self-transcendence) values simultaneously (24%), although, as with values, this did represent half of those who held either identity (Table 7.7).

8.2.2 Psychological constructs, higher-income householders and environmentally-significant consumption

Although the inter-relations between the constructs revealed in this research are theoretically important, for this thesis, the more important question, both theoretically and for practioners, is how they might relate to higher-income householders (HIH) and their environmentally- significant consumption (ESC).

8.2.2.1 General Values

Previous research shows self-enhancement values are a more weakly reported value in populations than self-transcendence values (Nordlund and Garville 2002; Thøgersen & Ölander, 2002; De Groot and Steg, 2008; Gatersleben et al., 2009). Supporting this, the HIH group sampled showed strong biospheric and altruistic values, both in terms of the very high number of respondents holding these values and how strongly the values were held. Conversely, egoistic values were only held by a large minority of respondents and relatively weakly (Table 7.5 – repeated in Table 8.1). Therefore this study provided no evidence that HIH have higher levels of environmental values than in the general population, something which has been implied by literature, as presented in Section 2.2.3.3.

Table 8.1 Value and identity construct scores

	Number of items in scale	Number of options	n =	Median	Mode	Mean	Standard deviation of the mean	Minimum mean	Maximum mean	Percentage with a positive orientation	Percentage without a positive orientation	Mean of those with positive orientation
Values												
Biosphericism	4	5	107	4	4	4.1	0.5	3	5	96	4	4.2
Altruism	4	5	109	4.3	4	4.2	0.5	2	5	99	1	4.2
Egoism	5	5	106	3	3	3.1	0.6	1.6	4.6	48	52	3.5
Materialism	20	5	105	2.45	3	2.4	0.5	1	3.5	9	91	3.2
Identity												
Affluent	5	5	106	3	3	3.2	0.6	1.2	5	54	46	3.6
Environmentalist	5	5	109	3.2	3	3.0	0.6	1.2	5	43	57	3.5

Additionally, the observed lack of correlation between pro-environmental values and energy consumption means that the alternative notion that HIH in fact have lower levels of environmental concern, is also not supported. The data instead suggests that HIH may not be very different to the general population in their expressed adherence to all three values – something requiring validation in other samples. This is further indicated by the lack of correlation between the income variable and any of the values within the HIH sample (see Table 7.8).

8.2.2.1.1 Value-action gap and HIH

There is evidence to support the idea of a value-action gap in the HIH sample, something which was also indicated by the qualitative stage results. General values were found to be unrelated to ESC across an aggregation of the categories of leisure flights, large-engine cars, new durable products or household fuel use. Biosphericism and altruism, which would be expected to reduce consumption significantly, had no significant negative relationship with any of the consumption behaviours.

The fact that this study found that those who had high consumption levels in all three categories were not significantly different in their biospheric and egoistic value orientations, to those who do not consume at high levels (Section 7.6), further supports the above findings. Comparison with other research is limited by the scarcity in this area, particularly where the general values are related to behaviour rather than intentions to act, and most importantly in relation to environmentally damaging consumption (rather than pro-environmental behaviour - as detailed in Section 2.1.1.3.2). However, the lack of correlation between values and behaviour found is in line with other studies available (Bohler et.al. 2006; Vringer et al.'s 2007; Gatersleben et al., 2009).

8.2.2.1.2 Altruism and long-distance holiday-taking

Surprisingly, the only relationship between general values and reported behaviour was a positive association between altruism and long-distance holidays (Table

7.11). This was further supported in Section 7.6.1.1.3 which showed that those who took long-distance holidays on a yearly basis were significantly more likely to be altruistic than those who did not take long-distance holidays. This is particularly interesting as altruism is considered a self-transcending and pro-environmental value, and as such it is expected to have a positive impact on behaviour relating to the environment, as outlined in Chapter Two. Although the relationship is not strong ($r_t=.17$, $p=<.05$), the result is supported by the fact that altruism was significantly related to those who take long-distance holidays versus those that don't and that they appeared to have far more need satisfaction services provided by these holidays (Section 7.6.1.3.2). Additionally, given the nature of the concepts studied and the potential importance of the result, this association provides the basis for further enquiry.

The relationship between altruistic values and long-distance flying has, to the knowledge of the author, not been considered previously, and therefore this finding cannot be compared. To understand the potential basis of this relationship it is useful to reconsider the items that make up the altruism scale, which are summarised in Table 8.2. If these are viewed in the context of issues of global poverty and international development, which have become increasingly prominent in the media and public consciousness since the 1980's, then altruism may be deeply connected with solidarity and outreach to developing countries, and, at a minimum, a global perspective in a way that it may not have been prior to this period. The importance of assessing what the altruism scale actually measures becomes more important in light of lower than ideal scale reliability scores, that were returned in both this study and by Gatersleben et al. (2009).

Table 8.2 The altruistic value scale

EQUALITY (equal opportunity for all)
A WORLD AT PEACE (free of war and conflict)
SOCIAL JUSTICE (correcting injustice, care for the weak)
HELPFUL (working for the welfare of others)

Source: Schwartz, 1992,1994

If altruism is correctly interpreted in this way, then a connection between flying to far-off places and having altruistic ethics, becomes more comprehensible. The data implies that the tendency to take long-distance holidays every year is related to increased levels of altruism, so the question arises: To what extent does maintenance of an altruistic value depend on the taking of long-distance holidays, and therefore, to some extent on having higher-incomes? Furthermore: To what extent does the taking of long-distance holidays form the altruistic value in the first place? These are questions that require further research, along with investigation to confirm if the connection is replicated in other HH, and indeed in other populations.

The issue of value conflicts is also one that requires consideration. Since the Brundtland report (WCED, 1987), media connections between development issues and environmental degradation, especially climate change, have become increasingly clear. As such the taking of long-distance flights for pleasure is likely to be increasingly recognised as being in direct conflict with altruistic values. The extent to which this conflict is recognised, and cognitive value dissonance occurs, or the conflict is unrecognised, is an area that would benefit from qualitative enquiry.

Certainly, if a relationship is confirmed to exist between altruism and long-distance flying in other populations, then understanding the antecedents of altruism, which was shown in this study to be widely and strongly held, becomes of heightened importance.

8.2.2.1.3 The role of egoism

The results indicate that egoism may not be suitably considered as a significant driver of ESC. Egoism did not correlate negatively with self-transcending values, as described above, and additionally it did not have any significant relationship with any measures of ESC, except for product importance. Furthermore, the relationship with product importance was based on egoism's relationship with materialism. A neutral relationship between egoism and environmental behaviour is

something widely reported (Schultz and Zelezny, 2003) and studies reporting a negative relationship tend to be in relation to pro-environmental rather than ESC. This has implications for behavioural interventions, as Schultz and Zelezny (2003) suggest, pro-environmental behaviours are 'sold' in ways that are likely to repel those with egoistic orientations, which may explain the negative correlations. Further investigation into egoism is also important as some report that egoism could be a positive force for environmentalism, as it aids the efficacy required to enact environmental behaviour (Shifter and Ajzen, 1985, Stern, 2000).

8.2.2.2 Specific values

8.2.2.2.1 Environmental concern and its measurement

Following concerns about the environmental protection or biospheric focus of the NEP (Dunlap and Van Liere, 1978, 2000) and the lack of comparison to other issues of concern, this study adapted a technique used in the Standard Eurobarometer (European Commission, 2007), where participants chose two dual ranked issues from a broad list. Interestingly, despite the extremely high number of respondents adhering to a biospheric or altruistic value, and almost half to the environmentalist identity, less than half the respondents indicated that one environmental issue was a top two concern, and only very few cited two.

This implies that although personal orientation towards the environment may be high, it can be overshadowed by other issues. It is therefore likely that behavioural, monetary and policy support by individuals could be diverted from environmental issues towards other issues, therefore contributing to gaps between stated environmental orientation and actual behaviour. The fact that environmental concern, (as an aggregate of climate change, energy and environmental protection concern), was related to biosphericism and the environmentalist identity, increases confidence that all three constructs are more strongly measuring environmental protection issues, rather than derived social altruistic issues.

Climate change was the most frequently prioritised issue (Table 7.7), something hypothesised from the qualitative stage results. With a much lower frequency of

responses, energy issues were next highest and environmental issues attracted the least concern. This is an interesting finding as it suggests that for many HH, climate change and environmental protection issues are considered as distinct, with climate change dominating levels of concern. This reflects media and public debate where climate change can be observed to have dominated broader environmental sustainability. The hypothesis that energy concern has become an environmental issue, as evidenced by the Transitions Town and other movements, is supported by the fact that energy concern is related to the environmentalist identity and that those who do not take any leisure flights are more likely to be concerned about energy (Section 7.6.1.1.3).

The fact that those who are concerned about environmental protection issues are not any more likely to consider themselves environmentalists or to hold biocentric or altruistic values, suggests environmental protection may not be so strongly related to being an 'environmentally orientated person' in the way it was originally conceived by the likes of the NEP scales and other earlier conceptions of environmentalism. This is reinforced by the fact that environmental concern, in aggregate, and climate change concern particularly, are both positively related to an environmentalist identity and biospheric values, and energy concern is related to the environmentalist identity. Therefore, it is possible that the very idea of environmental concern may need to be reconsidered, where more abstract concepts such as climate change or energy security may have replaced, or at least be competing with, issues around species protection and closeness to nature, rather than being encompassed within it. If such results are replicated in other populations, this has implications not only for the NEP but also awareness of consequences research, that builds on Schwartz's norm-activation model of altruism (Schwartz, 1973; Snelgar, 2006).

As no relationship was found between income or assets and environmental concern at an aggregate or component level, this research (of those who are above a certain income level already) does not support the conclusion that wealth is connected to environmental concern.

8.2.2.2.2 Materialism and product consumption

As found in other studies, materialism was a value held by only a very few respondents and then only weakly. Although the proportion of respondents holding the value are not reported by Gatersleben et al. (2009), their mean value results are similar, with 2.58 compared to a slightly lower 2.4 found in this study. Richins' (2004) summary of 15 data sets, with sample sizes from 110 to 621, indicates an item average response of 2.85 for the 18 item scale. This suggests that HH may not have higher levels of materialism than the general population, contradicting the majority of literature on this topic. However, the significant, yet weak, relationship between materialism and assets (but not income) and materialism and the affluent identity, which is based on financial success, appear to indicate that the ownership of wealth does have a bearing on how materialistic someone is, or vice versa. This supports assumptions about materialistic people valuing the "means to acquire possessions" (Richins and Dawson, 1992:308; Hirschman 1990).

The fact that the link with actual product consumption is stronger (and significant) between the affluent identity, than between materialism, suggests that the consumption of products may be more of a necessary way to achieve identity coherence, as postulated in Chapter Four, than being based on fixation with material goods *per se*. What is also pertinent here is that without the inclusion of assets as a socio-demographic variable, or the affluent identity, this connection between materialism and wealth would not have been captured by the standard income variable. It is therefore strongly recommended that assets are included in sustainable consumption studies alongside income.

As well as only being relevant to a small number of people, this study found materialism was not important in terms of energy consumption, and only related to products in terms of their importance and desired levels of future consumption (Table 7.11). The relationship between assets and materialism reduces the possibility that this is due to restrictions on actual consumption. It may indicate that the 'idea' of product ownership is more potent to those who are materialistic than

the lived reality of product ownership, or that other functional issues (such as the influence of other household members), may be limiting actual consumption.

The fact that in this study materialism was only related to products, and not leisure flights, could be expected, as holidays are an experience rather than a material good. A car, on the other hand is material, and yet materialism was not related to the importance placed on the car of choice. The high scores for experiential need drivers for cars (Table 7.30), and the dream-like qualities of potential ownership found in the qualitative research (Appendix 2) may reflect the reduced materiality of cars and somewhat explain these results. This may be further explained by the fact that experiential and relational needs-based drivers of car use were more important than functional aspects for those who are more materialistic.

The correlation with products may also be an inbuilt consequence of the way that materialism has been conceived and the resulting item wording which is focused on material objects, and therefore most conceptually aligned with products. However, as the fundamental feature of materialism is the extent to which someone's values and sense of self are tied to consumption, with a psycho-socio-cultural lens, the symbolic connection between values and consumption are not only present in physical objects but also services, events and experiences. Therefore, there may a case for opening out the concept of materialism to include a broad range of consumption. Otherwise, the notion of materialism should be employed in the sustainable consumption field, with the caution that it may only relate to a narrow form of consumption, which may or may not be the most energy significant.

As outlined earlier (2.2.4.2.1), only a few studies have considered environmental issues as they relate to materialism, and fewer still investigate consumption behaviour rather than materialism's relationships with other antecedents. The results of this research are contrary to those found by Gatersleben et al. (2009) who, as with this study, looked at behaviour that was environmentally-significant rather than pro-environmental. They found that materialism was positively related

to a range of high-technology, energy consuming consumption practices, and negatively related to low-energy consuming practices, often split by gender. Although the results here did not support this finding, the wide range of drivers of new product consumption that were linked to materialism, particularly wanting products to match (something also indicated in the qualitative results), and having an identity that is linked to up-to-date products (section 7.6.6.2.4), does indicate an indirect connection. Interestingly, although using a different bespoke measure of environmentalism, Banerjee and McKeage's (1994), found a similar level of negative relationship with materialism ($r=.20$, $p=.01$). The fact that materialism was not related to any socio-demographic variable, except assets, reflects Banerjee and McKeage's (1994) findings.

8.2.2.3 Identity

8.2.2.3.1 Validity of the scales

The two bespoke scales developed for this research appear to be initially validated by the results. Not only were the reliability alphas reported acceptable (Table 7.4), but as previously discussed, they correlated as expected with all other psychological constructs of a similar orientation. The fact they do not correlate too highly suggests that they are measuring different constructs. Additionally, the constructs add insights regarding consumption that the other variables do not, both in terms of reported consumption, and the drivers that shape consumption.

8.2.2.3.2 Conflict and coherence between the affluent and environmentalist identities

The affluent and environmentalist identities were each held by around half of the respondents, with about half of those holding both identities at once. This suggests that seeing oneself as financially successful and an environmentalist was a relatively common occurrence, something reinforced by the lack of negative correlation between the two variables. It also reflects the increasing perception that wealth and being 'environmentally friendly' are connected (Section 2.3.2), although this tends to be in relation to pro-environmental behaviours that do not infringe on core identity-related behaviour. The qualitative data gave an insight into the

process of identity conflict that might occur in relation to environmentally-significant, and identity-significant, consumption, for example, in the case of car choice, where identity conflict was shown to occur and affect consumption (Section 6.4.3.1). The fact that males were more likely to have an affluent identity, and to hold both an affluent and environmentalist identity at once, is an interesting finding, suggesting that the drive to be financially successful, and the potential conflicts with environmentalism, may be gender biased.

8.2.2.3.3 The environmentalist identity

The results indicate that the environmentalist identity may be a useful addition to future sustainable consumption research. Whereas no other self-transcendence orientation had a significant negative relationship on any aspect of consumption, the environmentalist identity did, in terms of the importance of car choice and the importance of long-distance holidays (Table 7.11). Additionally, the identity was related to those who did not fly by air each year (to either long-distance or European destinations see Section 7.6.1.1.3) suggesting that there is a stronger understanding of the role of flying in environmental damage by those who hold this identity.

The environmentalist identity scale invites explicit affiliation with a term that indicates action to protect the environment (Clayton and Opatow, 2003; Dunlap and McCright, 2008). In this way it could be considered more unequivocal than the biospheric value scale. This would appear to be validated by the fact that many more people adhered to the biospheric value than the environmentalist identity (see Table 7.5), whereas it might be assumed that the two were highly complimentary. However, the fact that those HIH who defined themselves as having an environmentalist identity were not less likely to consume or to desire to consume less, suggests enacting identities is just as difficult as enacting values, when it comes to environmental behaviour. Research has suggested that people are willing to engage in simple and easy tasks but not willing to forfeit highly valued activities for the environment (DEFRA, 2007b), something also indicated in the qualitative results of this study. Further research to understand these gaps in relation to environmentally-significant, rather than pro-environmental behaviour,

and for those who are most likely to engage in them (i.e. those with higher-incomes and assets), is recommended.

8.2.2.3.4 The affluent identity

The affluent identity was the only psychological construct related to product consumption, which would indicate it would be useful to include this scale in future research into the product consumption by wealthier groups. It was also related to the importance of products, the latter, however, being independent of its relationship with materialism. This is in line with research which has confirmed the independent role of identity on consumer behaviour (Sparks and Shepard 1992; Sparks and Guthrie 1998). The significant positive connections between products, materialism and the affluent identity, which is not replicated in the other ESC categories, suggests that the inter-relationship between the affluent identity and materialism may rest somewhat on how material objects are seen as deeply connected with a sense of a financially successful self. These findings combined with materialism's connection with assets, another measure of financial status, indicates that the dynamics between wealth and material goods which has been proposed by researchers, (Richins and Dawson, 1992:308; Hirschman 1990), is a valid field for more in-depth research.

8.2.3 The role of wealth

The research has reinforced the consistent findings, outlined in Chapter One, that income is the most significant factor in relation to energy use (Lutzenhiser and Hackett, 1993; Burney, 1995; Perrings and Ansuategi, 2000; Moll et al., 2005, Lenzen et al., 2006; Vringer et al. 2007). However, the study design employed here allowed more detailed results about income and wealth to be gathered. Firstly, as has been discussed in other areas of this conclusion, assets were shown to be a vital addition to understanding energy use. In the partial correlation analysis performed in Section 7.5.3.1, assets were revealed to have a more significant independent relationship with energy use than income, although, for the actual consumption of cars and products income was more powerful than assets. Assets

were also significant to the perceived importance of cars and products, whereas income wasn't.

Importantly, assets, which represent more durable constant wealth than income, which may be drastically affected by a change in job circumstances, provide a connection with psychological orientations that may offer a route to understanding the role of wealth on consumption in more detail. Assets were related significantly to both the affluent identity and materialism, whereas income was not significantly related to any psychological variable. In turn, the affluent identity, which most clearly represents the centrality of 'being someone who is wealthy' in the psyche, was related to actual product consumption, and additionally to the male gender. Overall the results suggest assets should be included as a separate socio-demographic measure when studying sustainable consumption.

The qualitative research revealed that income was both the means by which pre-existing preferences were met and the spur for increased consumption. Increased income meant that dreams about consumption that has been formed over a period of time, particularly in terms of cars, could be met. Additionally, restraint in consumption, for example, camping instead of staying in a hotel, appeared to be weakened through the access to money. For others, there was recognition of a social obligation to consume in ways that match available income. This reflects lifestyle perspectives on consumption and identity (Chaney, 1996; Bockock 1993) whereby engaging in normative patterns of consumption for particular sub-groups is deemed vital for maintaining a sense of personal validity and identity coherence.

8.2.4 The role of other socio-demographic variables

The research has shown the important role of other socio-demographics factors, particularly lifestage. Households with more 60-75 year olds are frugal when it comes to new durable product consumption and energy from car use, but profligate in terms of their leisure flights. On the other hand, young families are less likely to take leisure flights but more likely to consume energy from cars and new durable products. These latter types of consumption are also exacerbated by levels of

wealth. The implications of socio-demographics will be considered more fully in Section 2 of this chapter.

8.3 Psychological orientation summary remarks

This research has shown the value of studying different psychological orientations together in a behavioural context. The data have shown that materialism, egoism and altruism are all related to the ESC of the HIH sample, in varying ways.

Additionally, the identity scales designed for this research were both connected to different aspects of ESC, where no other psychological orientation was, indicating its potential utility in future research. Surprisingly, when a behavioural approach to ESC is taken, some pro-environmental values may, in fact, provide an anti-environmental force, as is suggested by altruism's relationship with long-distance holidays.

Although some of the psychological orientations measured are related to the ESC studied, they appear less important than some socio-demographics, with lifestage being particularly important. Wealth, in terms of both income and assets, as expected, was found to be of great relevance to the ESC of HIH.

8.4 SECTION 2 – Key needs-based social marketing findings

The second objective of this study is to identify insights regarding needs-based drivers and constraints of ESC by HIH. These, combined with the insights around psychological orientations and socio-demographics, provide useful insights that can help guide social marketing strategy by practitioners and provide the basis for extended research. Providing social marketing insights, as the basis for intervention, involves making generalisations from the data to provide the most likely success from what is currently known, rather than certain success from deductive analysis. As such this chapter will provide a discussion in this vein.

The importance of targeting HIH through social marketing is underlined by the results, which show that levels of consumption by HIH who already consume at high levels, would be far higher if unconstrained – across all the categories. Therefore social marketing would appear important, not just to reinforce existing constraints but to shift the underlying demand by altering the way in which these high-energy consumption practices link with need satisfaction.

This section will discuss the social marketing implications of the results in respect to each of the three ESC categories of leisure flights (long-distance and European), large-engine cars and new durable products.

8.4.1 Leisure Flights

The results of the leisure flights analysis reveal a number of important insights. As expected, a large majority of the HIH respondents took a leisure flight each year (75%), this is in comparison to the figure of 50% for the general population revealed through the literature review (DfT, 2003). Therefore this category is verified as being an environmentally-significant practice that HIH are likely to be highly engaged in. Despite the sample being HIH, money is still seen as a significant constraining factor with an increase in wealth likely to increase leisure flight taking, which was supported by the qualitative data results.

The following sections will focus on the key findings for leisure flights in terms of the need benefits the activity provides, the key sub-target groups (within the overall HH target group) and the social marketing implications, which includes any relevant constraints.

8.4.1.1 Long-distance leisure flights

8.4.1.1.1 Stimulation and long-distance leisure flights

The results indicate that, for the sample, long-distance holidays primarily provide experiential need satisfaction, particularly the need for 'stimulation' such as finding out how other people live, experiencing a different lifestyle and providing stimulating experiences (see Table 7.19). This supports previous findings (Uysal and Hagan, 1993; Bohler et al., 2006) and supports the foundational concept that novelty is a key tourist motivation (Cohen, 1972; Snepenger, 1987). The need for stimulation could be judged to fall within Max-Neef's (1991) 'understanding' need category which includes curiosity and investigation. This suggests that difference is an important reason to fly to far off places, but that the difference must provide specific cognitive or sensory services. Long-distance holidays are significantly less important for providing the more functional (relaxation, aesthetic and pressure alleviation) services that European holidays do (Section 7.6.1.3.1). This is contrary to the classic association between long-distance holidays and vast, isolated beaches in sunny weather.

8.4.1.1.2 Socio-demographics and stimulation

Stimulation does not appear to be equally important for all groups. The results of this research partially support the proposition that education may be indirectly connected with the need for stimulation, as higher education levels were significantly correlated with the search for stimulation. In terms of the role of wealth, although assets were not directly connected to long-distance holiday-taking, they were correlated to the search for stimulating experiences (which was connected to long-distance holiday-taking).

However, most striking were the connections found between household lifestage, long-distance holidays and the search for stimulation. The results showed that smaller households with less children and more 60-74 year olds in them, were more likely to take long-distance holidays, and they were more likely to take holidays in order to provide stimulating experiences. This suggests that, as for long-distance holidays in general, these holidays are used as a proactive tool for discovery. Although some studies have found age to be negatively related with seeking stimulation (Correia et al., 2008), other studies of tourist roles have shown mean ages to be older where novelty is sought, compared to those seeking familiarity. Mo et al. (1994), for example, found age was eldest ($M = 50$) in the tourist cluster where the destination itself was the source of the stimulation.

The results of this research appear to support findings that retirees are progressively driving what is known as the experience economy (Gilmore, 1998) particularly via long haul travel. The current and long term growth of long-distance holidays is increasingly seen to be based on demand by this group (Demos, 2004; Patterson and Pegg, 2009; Goodley, 2010). Experiences being a key holiday motivation for the over 60s was also the conclusion of more recent research (Patterson and Pegg, 2009). Over 60s have been found to be looking to fulfil the 'gap year' experience that was not financially possible when they were young, "traveling to unusual places, meeting local people and discovering other ways of life". (Demos, 2004:21). STA estimate that a third of older people will be taking long-haul holidays in 2011 and the company aims to be taking 50,000 UK people on 'grey gap years' that year (Goodley, 2010).

It may be that this quest for experience is in fact related to those 60-75 year olds from HH specifically. Research by Demos (2004) found that whereas lower income groups were looking forward to retirement as a chance to relax after years of hard, often manual, work "By contrast, our interviewees at the higher end of the income spectrum were more likely to see older age as an opportunity to try new things, to fulfill long-dormant hopes and aspirations and to get involved in the world around them in entirely new ways." (Demos, 2004:104). Others also note the

connection between wealth and education and the taking of holidays for stimulation purposes (Bohler et al., 2006; Henley Centre in Pizam & Mansfeld, 1999). This also relates to what is known as the 'Travel Career Ladder', a contested idea where past tourism experiences are deemed to inform future ones (Pearce, 1988, 1996; Ryan, 1998). Pearce related this to a needs hierarchy, following Maslow (1943), which suggested those who have travelled more tend to travel for reasons such as esteem and affiliation rather than lower order needs. As HIH are known to travel more (UKERC 2006; DEFRA, 2007b) it may be that higher levels of experience of travel influences the quest for stimulation and therefore long-distance destination preference. However, others have found limited evidence for a Travel Career Ladder and instead suggest the key factor underlying the notion of a Travel Career Ladder is age and lifestage (Anderson and Littrell, 1995; Kim et al. 1996; Ryan, 1998).

8.4.1.2 Social marketing interventions to reduce long-distance leisure flights

The results of this study suggest that social marketing efforts for the HIH segment, and future research, should be focused on:

- Reducing the long-distance holidays taken by households that are smaller, with less children and more 60-74 year olds.
- Increasing the symbolic connections between the altruistic values and lower energy holidays

8.4.1.2.1 Reducing leisure flights by 60-75 year olds

The results indicate that reducing long-distance holiday taken by 60-75 year old HIH would require increasing the strength of the symbolic connection between stimulating experiences of new places, events and people and destinations in the UK or Europe. Additionally, these product offers should be symbolically connected with biospheric values, which the results indicate were widely supported, so that the connection between stimulation and biospheric values is built, as well as the connection between low-energy holiday-taking and biosphericism.

Given the cultural and environmental diversity of Europe, and even of the UK, increasing these types of product offers should be possible, although the extent of the challenge to alter existing strong symbolic connections between long-distance holidays and stimulation cannot be underestimated. Additionally, the possibility for increasing the supply of stimulating UK 'stay at home' holidays to engage 60-75 year olds is something that has been recognised as a potential 'Greycationer' market (Gordon, 2009). Although socially driven enterprises may voluntarily enhance these kinds of offers, to significantly advance the market for such holidays may require government to provide incentives/ disincentives for the industry. It is recognised that until long-distance travel is included in the carbon budgets of the government, something urged by the UK Committee on Climate Change (Harvey, 2012), the likelihood of a government focus on long-distance travel is slim.

8.4.1.2.2 Increasing the connections between altruism and lower energy holidays

Those who are more altruistic were more likely to take long-distance holidays and would be a viable target group within the HIH segment. As mentioned previously, this is a particularly interesting finding as it is generally expected that pro-environmental values support sustainable consumption rather than relate to non-sustainable consumption. The fact that climate change is projected to undo decades of development work in poorer countries (UNDP, 2007), means that there is the potential to invoke value dissonance, as a specific form of cognitive dissonance (Festinger, 1957). By highlighting this contradiction in a more targeted and concerted way than has been done previously, there is the possibility to create a more conscious understanding of the conflict, with the assumption that behaviour will therefore be adjusted to meet the value, if it is held strongly enough.

However, this must be done within a psycho-socio needs-based framework because the results of this study suggest that this consumption is likely to be driven by the wide range of need satisfaction that those with altruistic tendencies are gaining from long-distance holidays. These are: Interacting with new people; providing stimulating experiences, something exciting to look forward to; finding out about oneself and providing something interesting to share with friends (although

the latter two have low frequencies of support overall). Without supplying new, or altering existing holiday products, so that they are strongly connected to the fulfilment of these needs, altering behaviour of altruistic people, even with a process of dissonance invocation, is likely to be difficult. Focusing on making it easier for altruistic people to consume in ways that they would prefer, based on their values - but do not, due to their requirement to fulfil other needs - can be likened to Wallack et al's (1993:204) contrast between intervention programmes that encourage people to "beat the odds" versus ones that focus on "changing the odds". so that new behaviours are easier to perform. More research investigating the relationship between altruism and long-distance holiday-taking and improving the reliability of the altruism scale, is needed to increase confidence in these results and their implications.

8.4.1.3 Social marketing interventions to reduce European leisure flights

For European holidays, rather than stimulation and a move towards an experience, the results instead revealed their role in satisfying the need to escape from more undesirable aspects of everyday life. Researchers suggest that the need to escape does not connect with any particular destination, as long as the social and physical features are different from the norm (Crompton, 1979). Crompton's assessment suggests that difference is an important feature of escape, but in this case difference serves an alternative purpose to that required to provide stimulation, as in the case of long-distance holidays above. Although the precise destination may not be important, as Crompton states, this research reveals that, in fact, certain types of holidays can lend themselves to pressure relief. For the sample studied, here it is likely that the ease of travel to European destinations by air, combined with their high 'difference' factor, makes them ideal for this purpose.

As with long-distance holidays, older respondents with more 60-75 year olds in their households were more likely to take European holidays. However, as European holidays were more associated with escape from the pressures and routine of life, and 60-75 year olds were less likely to see these issues as

important, there appears to be a mismatch in the data. The data indicate that there may be two important HH Baby Boomer target groups in respect to leisure flights: Those who take European holidays for escapism and those who take long-distance holidays for stimulation. This requires further research but may be related to 60-75 year olds with more manual jobs (related to the fact that those taking European holidays are significantly less educated, Table 7.13). It may also reflect those who are retired versus those who are in work.

In order to reduce European leisure flights, the goal of social marketing should focus on making strong symbolic connections between types of sustainable UK holidays, or European holidays by train, and the relieving of boredom, stress and providing relaxation. This research indicates the potential for increasing the symbolic connection between UK holidays and escape with the drive to get away from the routine of life most applicable to European holidays for 58% of respondents and is important to a large 76% of respondents. Additionally, marketing could focus on the hassle of going to Europe and the increased relaxation offered by staying in the UK. Product innovation could build on the 'staycation' notion that has been popular during the recession and has been this explicitly connected to environmental motivations (Butcher, 2010).

However, given the preference of Baby Boomer households for long-distance holidays and the need satisfaction they give, and the higher energy use of these types of holidays, it is suggested here that long-distance holidays should be the strategic priority for intervention. For long-distance leisure flights the goal should instead be to connect self-development and stimulation with either UK, or lower energy European, holidays. A more challenging role for social marketing is to connect the various 'needs' with non-holiday modes of need satisfaction.

8.4.2 Large-engine cars

For the HH who were driving large-engine cars, functional reasons were the most commonly cited, especially safety, reliability and comfort. Although the literature is not extensive in this area, there is an indication that more prestigious, and

generally larger engine cars, can be seen as symbolically relating to safety and reliability (Schultz, 2006), and potentially comfort (Hiscock et al., 2002).

As no socio-economic or psychologically orientated group were more likely to look for these need satisfiers, it can be concluded that they are generally important. This suggests, if results are replicated, that lower-powered cars marketed to HIH should be seen to fulfil these basic criteria if they are going to effectively compete with large-engine cars within the HIH segment. In fact, explicit action to increase the symbolic connection between these functional need fulfilment and lower engine cars would seem vital.

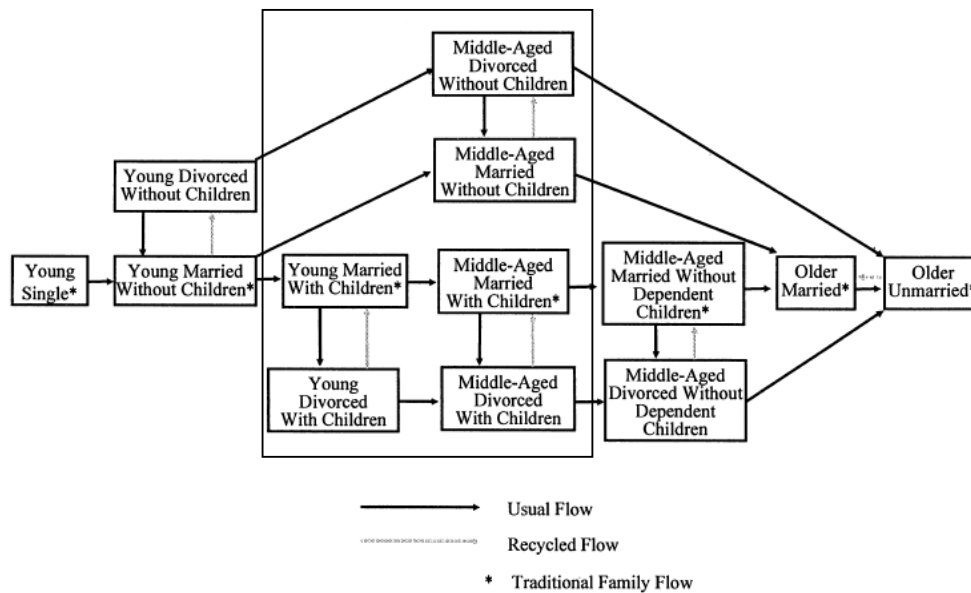
Based on the results of this sample, there is an indication that social marketing efforts and future research to reduce consumption of large-engine cars should be focused on:

- Younger, wealthier families
- People with materialistic orientations

8.4.2.1 Targeting younger, wealthier families

Energy use from cars was related to higher income, higher assets, larger households and younger and more educated people. In contrast to leisure flights, households with more 60-74 years olds were significantly less likely to have higher energy use from cars. As larger households tended to have dependents (Table 7.9), this suggests that younger professional families with higher-incomes may be an important focus for shifting car ownership from high-energy to low-energy consuming cars. Given the high age profile of the sample, 'younger' is likely to represent a range of family ages with babies, children or young adults. The boxed area on Figure 8.2, which is an adaptation of a figure by Murphy and Staples (1979) indicates the likely lifestage represented by the results.

Figure 8.2 Lifestages and their interconnections



Adapted from Murphy and Staples, 1979.

Younger respondents in the sample were shown to drive significantly more miles than other age groups. The miles driven could be related to commuting requirements of those working, or the need to move young people around. Interventions that help reduce mileage by this group should therefore also be a focus. Car sharing and public transport are obvious, but at the same time, it may be easier for some younger HH to promote a shift to lower energy cars than to alter travel modes. Additionally, more certainty on emission reduction is obtained if sustained behavioural change is not solely relied on, but instead lower impact is assured at the point of car purchase.

Further research into the best ways to engage younger, professional households in order to downsize the power of their car is necessary, although the results suggest that these larger households are significantly less likely to hold biospheric values (Table 7.8), so such environmental appeals may be counter-productive (Schultz and Zelezny, 2003). Although those with higher education use more energy via

their cars, those with less education seek more power from a car. The 'dream' based desire for certain higher energy cars was highlighted in the qualitative data as being important in driving future car consumption. Interventions should be considered which reduce this kind of powerful and long standing allure. This is likely to be heavily influenced by marketing from car companies, but also through the media more generally (e.g. Top Gear, car magazines, car shows and action films).

8.4.2.2 Increasing the connections between environmentalism and driving more efficient cars

It appears that there is a great potential to increase the recognition amongst HHH, that buying a large-engine car has important implications for their environmental and social impacts. However, this may be less effective for younger groups as discussed above.

The qualitative research underlined that there seems to be a very weak level of consideration of environmental and social issues when deciding what car to buy. Similarly, the quantitative results indicate that self-transcending orientations were not connected with reduced energy use from cars and self-enhancement orientations did not promote this kind of consumption. The majority of respondents did not consider that the environmental impact of their car was important, despite the wide-scale adherence to biospheric and altruistic orientations of those with large-engine cars. This supports notions of a value-action gap as outlined in Chapter Two (Kollmus and Agyeman, 2002; Barr, 2003). The gap is particularly related to the more educated target group who were significantly less likely to see higher-powered cars as desirable, and yet consumed more energy through their cars than less educated respondents, who were more likely to desire more power in their cars.

Environmental concern was revealed as having some bearing on large-engine car ownership, but only through its negative correlation to a range of need satisfaction

services gained from the car. Additionally, the environmental identity and biospheric value orientation were both negatively related to seeking prestige in a car, although these sentiments did not translate into a significant reduction in actual energy use from cars. This suggests that the orientations may be more connected with repelling notions of self-enhancement than embracing low-energy consumption practices. Although males were not less likely to have biospheric values, they were less likely than women to act on this value when it comes to cars, with women more likely to choose a car with the environment in mind.

8.4.2.3 Decoupling power, price and prestige

Although it is known that relational factors such as status are often important, people are reluctant to suggest that this is a motivation for the car they own (Jensen 1999; Hiscock et al., 2002), the results indicate very strong rejection of the importance of such factors (Table 7.29). However, the results show that there is a link between the desire for power and expense, as well as power and prestige (Section 7.6.5.1.3). This complements existing research around the drivers of prestigious car ownership (Byun and DeVaney, 2006), which links expense and prestige with higher income earners. It also supports the findings of the correlation analysis of costs and power of a car which was performed as part of this research (Section 3.2.4).

These correlations particularly highlight the importance of weakening the symbolic connection between the power of a car and its price and perceived prestige. This is something that car manufacturers need to incorporate within their notions of Corporate Social Responsibility. Although without strong government intervention they may not consider reducing their offer of high-powered, prestigious and expensive cars, they could be encouraged to consistently produce a range of relatively accessible cars that are low powered and yet marketed as prestigious. Only a few cars currently fall into this category, for example the Toyota Prius and the Lexus CT200h. Subject to verification of the findings of this study, these should be particularly focused on higher-income young professionals. The newly emerging

electric car market is an opportunity to alter the symbolic connections where currently low power often means cheap and 'fun'.

The results were clear in indicating how the car offers greater need satisfaction in a wide number of relational areas, for those of materialistic orientation (Section 7.6.4.2.4). Many of these need services were also related to higher levels of assets. If materialistically orientated people of higher incomes are using their large-engine car to provide for these kinds of need satisfaction then, although reducing their materialism is one very important goal, at the same time it is environmentally important that they attain this satisfaction through lower engine cars. The low number of respondents adhering to materialism does potentially reduce the importance of focusing on this issue. If tackled, the key would be achieving this without either reinforcing materialistic values or promoting wider support for the value, as some argue (Crompton, 2008).

Aside from banning high-powered cars or high-powered car marketing, possibly the least damaging way to achieve this would be through targeted social diffusion techniques (Rogers, 2003; Tucker, 2008). This would engage materialistic opinion leaders to adopt lower-powered, high status cars that were positioned as able to fulfil the need satisfaction requirements of: Being respected by other road users; attracting attention; standing out from the crowd; reflecting their professional and social status; indicating financial success; looking good; reflecting their gender; having lots of accessories and special features; and providing excitement. As a car's economy was negatively connected with materialism, it would be potentially important not to emphasise the costs savings related to lower-powered cars.

This approach would minimise visual and other information that would socially endorse these sentiments, something particularly valid as this study suggests that only a small number of people hold materialistic values. Additionally, this is the kind of approach that could be supported by social organisations such as Global Action Plan. At the same time, because these kinds of cars would include implicit or explicit symbolic connection to the environment (nearly all materialistic people also

held a biospheric value) the possibility of increasing the self-transcendence orientations of materialistic people is enhanced.

8.4.3 New durable products

Materialism, the affluent identity and egoism all related in some way to drivers and constraints that promote new product consumption, although materialism was by far the most important. Buying second-hand products is a key alternative to new product consumption, however, the results indicate that buying second-hand products is not something frequently engaged in by the sample. A large majority, for example, would buy new products even if used ones were available.

There was further evidence of a value-action gap in HIH respondents with none of the self-transcendence values being negatively related to actual product consumption, despite high levels of self-transcendence values. For most people in the sample the lack of support of second-hand products, something replicated in the qualitative data, may be influenced by the environmental and social benefits of second-hand purchase not being apparent, or at least not strong enough to shift consumption.

In summary, social marketing foci for reducing new durable product consumption by HIH could be:

- Targeting younger, wealthier families
- Increasing the attractiveness of second-hand goods for those with an affluent identity and those who are materialistic
- Enhancing the perceived quality of second-hand goods

8.4.3.1 Targeting younger, wealthier families

Similarly to car consumption, the consumption of new durable products was related to income and assets as well as to younger, larger households with more dependents. Whereas some studies have found wealth and income to be more explanatory than lifestyle for product consumption (McLeod and Ellis, 1982), in this study lifestyle appears to be similarly important (Table 7.13).

There was a particularly strong relationship between respondents of a younger age and the desire to consume more products ($r\tau = .53$) (Section 7.5.4.4). Therefore younger households, particularly those with higher incomes should be a key target group for reducing new durable product consumption within the HIH segment, subject to verification. For those households with children matching seems to be less important and therefore other aspects can be focused on. Having babies in the household was particularly seen as a constraint to buying an ideal number of products (Section 7.6.7.2). This suggests it may be useful to target social marketing at those younger HIH householders with babies, in order to restructure symbolic connections between products and need satisfaction, before those babies grow up and spending becomes less constrained.

The connection between new product consumption and younger households is reinforced by the negative propensity of those who are 60 and above to consume new durable products, particularly households with more 60-75 year olds. As this was not related to a significant difference in materialism, or a difference in importance of being 'up-to-date' it suggests products are fulfilling certain needs for younger householders, unrelated to the value placed on goods *per se*. It is possible that the lack of prior accumulation of products by younger households may mean new durable products are more necessary than for 60-75 year olds, something that is supported by studies of product consumption and lifecycle (Wilkes, 1995). Products purchased in the 'nest building' lifecycle (Wilk and Wilhite, 1983), as well as providing functional purposes, are essential in "display of social standing, meeting of minimum social expectations, and efforts to craft "individualized" spaces" (Wilhite and Lutzenhiser, 1999).

This also reflects how the symbolic importance of consumption practices are passed between generations, in a similar way to the acquisition of durable consumer goods being passed from western countries to the 'new middle classes' emerging in non-western countries (Lange and Meier, 2009). Positional consumption (Hirsch, 1976) asserts that those who have previously been excluded

from purchases, but have perceived the desirability and consequences of consumption by others, are motivated to address the consumption gap. The motivation to 'catch up', in order to attain a certain status or class is underlined by the large number and type of durable goods forming the basis of some class categorisations (e.g. Lange and Meier, 2009). Designing social marketing to disconnect class, status and the 'coming of age' from the product consumption practices of high consuming others is challenging. Certainly magazines and other marketing media that continuously represent the 'normal' or 'ideal' consumption practices should be targeted to consider the deeper symbolisms they are perpetuating and to connect relevant HH sub-cultures with lower energy products.

Although this study did not find younger householders had a significant propensity to be materialistic, others have concluded this to be the case (Gatersleben et al., 2009). Certainly the possibility of a generational difference in the role material products play in fulfilling needs of HH requires further investigation. This was partially evidenced in this study by very significant relationship between current product consumption and desire for more products ($r_{\tau}=.63$) which indicates a potential pathology of consumption by younger HH in the sample.

8.4.3.2 Targeting materialistic people and those with an affluent identity

Materialistic people and product consumption

Materialism was shown to be influential in terms of the tendency to buy new products over second-hand products, with a number of drivers related to materialism. Most notably, materialism was related to finding up-to-date products exciting, which was significantly related to actual consumption of new durable products. This is in line with Gatersleben et al.'s (2009) finding that materialistic people were more likely to have up-to-date, high-tech possessions and less likely to have low-tech ones. Altering the strong connection between new products and excitement will be extremely challenging, however, there are examples where the old has captured the space of the new by being 'revived', for example, with vintage

clothes. The exclusivity attached with older products that cannot be easily achieved in the same way with new products, could be used to enhance excitement from these second-hand or re-engineered products for example Elvis and Kresse's range of luxury reengineered fire hoses. Additionally, companies should be encouraged to create products that can be updated without being replaced, for example the Mercedes/ Swatch Smart Car which features replaceable coloured panels.

The most significant relationship found between materialism and new products was in relation to the desire for matching ($r = .55$), which, as supported by the qualitative research in Chapter Six and other research (Shove and Warde, 1998), drives up product consumption. This indicates that it would be useful if social marketing could more strategically support 'postmodern' fashion trends towards divergent and eclectic patterns and styles being desirable. This could be done by working with home styling magazines or television programmes such, as *Grand Designs*, to reinforce the positive associations of non-matching products.

The affluent identity and product consumption

A further target group for social marketing interventions is those who hold an affluent identity. This was the only psychological variable related to actual product consumption levels, as well as being positively related to the importance of product consumption, independent of its relationship with materialism. The fact that no other orientation had a bearing on product consumption is interesting, as it would be expected that self-transcending orientations would increase the levels of second-hand consumption, and therefore could be utilised through social marketing to reduce product consumption. The low level of connection between the affluent identity and egoism suggests that this is less likely to be for conspicuous status reasons based on the desire for more social power (O'Cass and McEwan, 2004), and instead simply for achieving internal identity coherence, as also evidenced by Kleine et al. (1993). Therefore, the results indicate that products may be particularly important in actualising feelings of financial success.

For social marketing, this could mean efforts to de-materialise symbolic connections with financial status would be important, possibly by enhancing the identified trends for ICT to facilitate status dematerialisation (Neice, 1998). Market offerings could be developed or promoted, which provide ways of achieving the need for an affluent identity in more sustainable ways, such as through internet based virtual reality (e.g. 'Second Life'), although the negative social sustainability issues with this need to be considered. However, as discussed in Chapter Four, caution must be paid to unsustainable consumption rebound caused by reinforcing self-enhancing values that may serve to increase physical consumption (Crompton, 2008; 2010).

8.4.3.3 Enhancing the perceived quality of second-hand goods

Many HHH respondents, in both the quantitative and qualitative stages, thought that second-hand goods were inferior in quality. This was positively connected to materialism and negatively connected to altruism. The connections with altruism are possibly due to the prominence of second-hand shops in the UK which symbolically connect buying second-hand goods with charitable ends. This suggests that in terms of the allure of material goods, second-hand products tend not to provide the same value to materialists in the sample, as new products.

Further investigation into this factor is recommended because one way of reducing the environmental impact of materialism would be for second-hand goods to provide the same need services to materialists as new goods. If this could be subtly connected to more self-transcending identities, then deeper value change is made more likely. For example, the materialistic benefits of charity shops as a means of constant affordable access to different products is something that could be focused on. However, for this to be successful the negative image of charity shops, as outlined in the qualitative research (Chapter Six), and the relationship between being 'up-to-date' and materialism would need to be considered.

More complex identity and taste issues are also influential in second-hand good consumption. Only a small majority disagreed that they were not the 'sort of

person' that buys second-hand goods. Agreement was more prevalent for males and those with higher levels of egoism. This suggests that the symbolic connections between second-hand and desirable influential identities, needs to be enhanced, particularly for men and those with an egoistic orientation.

8.5 SECTION 3 – Key Global Action Plan findings

This section will summarise the key findings of the Global Action Plan (GAP) analysis. Given the very small sample, generalisations would be unwise, however, indications for future research or programme development are discussed. As there are few differences with the general sample, the results found in the rest of this thesis will be of relevance to GAP when considering new programme development.

8.5.1 Broadening the focus from climate change

An important difference was found between the GAP sample and the general sample, in terms of environmental concern. A far higher proportion of people cited one environmental concern factor as being a top two issue, although none cited two. Furthermore, the ‘one’ issue was in nearly all cases climate change, with environmental protection and energy concern invoking almost no response. This was significant compared to Shaldon and also Dawlish, but not Bovey – which is the area with stronger grass root environmentalism. This indicates that, as with the general population, climate change is the most important concern, but this is heightened in GAP participants compared to areas that have not been exposed to community-wide environmental action. As such, EcoTeams may have provided a spur for engagement on the issue of climate change, although this could be influenced by the fact that EcoTeams tend to attract those environmentally inclined (see Chapter Five). At the same time, the lack of primary concern for environmental protection (the same frequency as the general sample) or energy issues (less than the general sample), is striking. UK economic issues were the next most frequently cited issue, which may in some way reflect the economic focus of the ‘Small Change’ EcoTeam programme the participants were engaged in, and/or their prior dispositions. These findings suggests that GAP may want to consider broadening the topics covered to deal more explicitly with biodiversity loss and energy security, the interconnected nature of these problems and their primary role in sustaining economic viability in the medium and long term.

8.5.2 Environmentally-significant consumption

Despite the higher levels of concern for climate change, the differences between the GAP participants and the general sample, in terms of actual energy use, is not significant, indicating that a similar value-action gap exists for GAP participants as for the general sample. Encouragingly, GAP participants did use slightly lower levels of energy in all categories. However, this was only significant in the case of long-distance holidays compared to Shaldon, but this is likely to have been influenced by the lower levels of assets found in the GAP participants, compared to the general sample, and particularly Shaldon.

Although there was an indication of lower levels of desire for more ESC, only one respondent said taking more leisure flights would make them feel guilty or it would not fit in with their values, and no-one saw the disapproval of family and friends to be an issue, suggesting a normative environment that supports increased levels of flying.

8.5.3 Influencing values

The results indicate that the small sample of HIH EcoTeam participants were, apart from climate change concern, very similar to the general sample, in terms of psychological orientations, with no significant differences found in their values and identity. As with the general sample, biospheric and altruistic values tended to be held, and held fairly strongly. The fact that the GAP respondent's did not hold self-transcending orientations any more strongly than the general HIH population is perhaps not surprising, as EcoTeams focused on addressing behaviours rather than values. As self-transcendence orientations are already strongly held, it seems this should not necessarily be a stronger focus of the programme.

However, there was also a higher tendency for the GAP respondents to also hold egoistic and materialistic self-enhancing values, leading to significantly higher levels of value conflict. The tendency towards self-enhancement of GAP participants is reinforced by the fact that a larger proportion of GAP respondents

held affluent identities than in the general sample. As with the general sample, more people held affluent identities than environmentalist identities.

The tendency towards self-enhancement may not be too consequential in the case of egoism, where the orientation was not necessarily counter to environmental orientations or behaviours (see Section 8.2.2.1.3). However, in terms of the affluent identity and materialism, GAP should consider focusing on how the programme might be able to reduce the strength of these psychological orientations, particularly materialism.

8.5.4 An overt social marketing approach for HIH

This thesis has argued that social marketing is important in re-aligning need satisfaction with environmentally benign consumption practices rather than current environmentally damaging consumption. For Global Action Plan, this represents an opportunity to engage in 'overt social marketing', as discussed in Section 4.5.3.2, where facilitation is given to help redefine social norms of consumption.

For example, GAP could administer guided discussions with groups of HIH about how needs are currently being satisfied by ESC, and how the group might begin to redefine the symbolic connections so that lower energy consumption can more effectively address needs. This would bring structures of need satisfaction out of the subconscious 'doxa' to the level of discursive elaboration where they can be re-formed (Wilk, 2002). As an example, this might help create common agreement that second-hand gift-giving is an acceptable way of showing gratitude, love and marking occasions, without negatively impacting on the affluent identity. At the same time, this would help to reduce the role of materialism in maintaining affluent identities. GAP might consider focusing this on males and those with particularly high assets, which this research indicated are more inclined towards the affluent identity and/or materialism. This in turn will begin to reshape what an affluent identity means in consumptive and value terms.

Due to the high level of value conflict, another focus for GAP could be the value-action gap of HHH. The normative lifestyle setting GAP provides would be suited to investigating what conflicts are being felt by HHH between their self-enhancement and self-transcendent values. An initial stage programme could help identify the source of conflict, with follow up programmes working on those areas of conflict most prevalent. This thesis indicated that how ESC is fulfilling important identity needs such as affluence or environmentalism may be a key source of conflict, and therefore understanding how consumption offerings and marketing are shaping these conflicts, could form part of a second stage intervention.

Due to the valuable theoretical implications of this work, it would be beneficial for GAP to work with a research partner when designing, implementing and evaluating the types of interventions described above.

8.6 SECTION 4 – Key contributions and future research recommendations

This thesis aimed to identify and examine the factors influencing ESC by HIH in order to provide theoretical and social marketing insights. A primary contribution of this research is to highlight that policy makers, practitioners (NGO's, government bodies and corporations) and academia should allocate more effort to considering the role of HIH in driving environmental impacts and what each can do to positive influence the drivers of their ESC. Although a lack of available data on HIH sample representativeness, along with low response rate, restrict the generalisation of results, this thesis has increased the previously limited understanding of the antecedents to consumption by HIH, opening up the context for future academic research and providing a basis for organisations to design social marketing interventions into this seemingly 'unfathomable' group (Hurth, 2006).

Whereas much sustainable consumption research in the past has considered pro-environmental behaviour of the general population, this research targeted three consumption behaviours that are particularly environmentally-significant and relevant to the HIH group in question: leisure flights, large-engine cars and new durable product consumption. These ESC categories have previously attracted limited empirical research in terms of sustainable consumption behaviour, and certainly not in respect to HIH. Therefore this research provides a useful empirical contribution in qualitative and quantitative terms.

8.6.1.1 Contribution to environmental social science literature

By combining a number of different psychological orientations, this research added to the important, yet limited, literature base within environmental social science literature, where one or more orientations have been combined in the context of sustainable consumption. This allowed for an overview of self-transcending versus self-enhancement orientations, and the results support the idea they form two distinct inter-related clusters. The theoretical benefits of understanding the inter-relations between these concepts, as advocated by previous researchers, (e.g.

Gatersleben et al., 2009), has therefore been advanced by this thesis. It is recommended that research combining the measurement of values, environmental concern, materialism and the newly introduced identity scales, be replicated in other HIH samples. Particularly, research into how materialism might be negotiating the two types of orientation is important. Additionally, assessing the range of orientations within general populations, not just HIH, will illuminate if the dynamics between the orientations and the role of materialism is distinct to HIH.

The research results also reinforce long-standing findings that psychological orientations may play only a partial or indirect role in guiding actual behaviour (Olsen, 1981). Value-action gaps, and other psychological orientation-action gaps were evidenced, supporting the hypothesis drawn out in Chapter Two, that HIH may particularly demonstrate these inconsistencies. The fact that a psychological orientation can be strongly held, yet income appears to be far more powerful in structuring consumption than the orientation, requires further research. The evidence of both self-transcending and self-enhancing orientations frequently being held together suggests orientation 'conflicts' may have a role to play in these gaps. Identity theory would suggest that where a conflict occurs, the more salient and socially rewarding self-enhancing parts of the identity are likely to 'win', in relation to consumption decisions. Further research to understand how these orientations are held within HIH identities, and how they play out in consumption decisions, is therefore highly recommended

The relationship that was found between long-distance holidays and altruism offers the possibility that self-transcending values may not always provide a negative influence on ESC. It suggests that a self-transcendence value on its own, if not interpreted in an environmentally relevant way in people's lives, may in fact spur higher consumption levels. Although the relationship was only weakly significant, the nature of these two constructs combined with the logical hypothesis for this, means that research to understand if this relationship is replicated, would be useful.

Additionally, the research supports a continued focus on socio-demographics as important in structuring behaviour, despite a move in recent years to rely more on lifestyle factors (Michman et al., 2003). Lifestage was particularly significant, with two distinct groups demonstrating varied and consistent relationships with ESC. These were households with more 60-75 year olds and younger larger households. The research showed that, even within a higher-income sample, income and assets are reinforced as being the most consistent influencing factor in actual consumption, both at an aggregate level and individually for cars and products, although interestingly not for leisure flights. This research has particularly highlighted the distinct role of assets, most notably in linking aggregate energy use to self-enhancing, psychological orientations (the affluent identity and materialism), where income did not provide these connections. It is therefore recommended that assets be included in future research into sustainable consumption, alongside income.

8.6.1.2 Methodological contributions

This thesis also highlighted how environmentally-significant psychological orientations and social marketing insights are highly compatible, adding rich insight into what might be shaping consumption behaviour. As outlined in Chapter Four, the suggestion that values transcend behaviour, in that they should, theoretically, be invoked in all behavioural circumstances, has tended to position values research as separate to the specific behavioural contexts of social marketing. It was argued in this thesis that this separation, combined with the dominance of the rational economic approach to consumption within social marketing, has meant that research into the values and other psychological orientations of audiences for social marketing interventions, has been repressed.

Utilising a psycho-socio-cultural approach to needs, this thesis has demonstrated that psychological orientations, socio-demographics, and behaviour based needs and constraints, have roles to play in shaping different types of ESC. Additionally, the research indicated that these interact in ways which are important to understand, when designing effective interventions. For example, as well as being

particular to different behaviours, psychological orientations were also shown to be related to certain socio-demographics. Additionally, although psychological orientations (other than the affluent identity), were not significantly related to measures of actual consumption, they play an indirect role in their relationship with the desire for certain consumption, the perceived importance of certain consumption and the needs that are perceived as being satisfied by that consumption.

This research also contributed by introducing two original scales representing the affluent identity and the environmentalist identity. Both these scales were shown to have good reliability and were related to self-enhancing and self-transcending orientations respectively, as predicted. Importantly, the affluent identity was revealed has having a significant relationship with overall energy use and product consumption. This is important because it introduces another way, other than assets, where wealth connects with ESC through the psychological realm. How the affluent identity is constituted and how it relates to consumption via lifestyle groupings or other specific socio-cultural realms, would be a very useful avenue for future research into the income-energy use relationship.

The research also initially validated a way of measuring environmental concern by interpreting it as constituted by three distinct areas of concern; concern for environmental protection, climate change concern and energy concern. This revealed that climate change dominates the other concerns and that environmental protection concern is the least prevalent, despite being the most related to the original conception of environmental concern. Further research to test this method alongside the NEP is recommended in order to understand if the NEP measures a similar concept to that interpreted by 'environmental protection concern', and where the NEP may be only capturing a partial picture, by not explicitly including climate change or energy concern.

8.6.1.3 Contributions to practitioners

This research has provided a basis on which those organisations wishing to make a contribution to reducing the environmental impact of consumption by HIH can begin to comprehend the basis of the impact by this group, design further research or undertake interventions in a more informed manner. NGOs and government departments (both national and local) and quangos are likely to find most relevance from the findings of this research as their social welfare focus means they often have a natural motivation to reduce the impact of ESC. However, as discussed at the beginning of this thesis, private organisations (particularly those who serve HIH markets), will also find relevance as the trend moves to broader interpretations of CSR and therefore the role of organisations in positively influencing sustainable consumption. As the research was undertaken at a behavioural level with both psychological and need-based assessment of the basis of existing unsustainable consumption, there is sufficient level of detail to implement focused research to validate the findings in different populations social marketing or to design an intervention around a particular behaviour covered in this thesis. The thesis also indicates that psychological orientations should not be relied on to influence across behavioural category and that the influence of these will vary by sub-population groups.

8.6.1.4 Contributions to Global Action Plan

Although the GAP HIH sample was particularly small, the between group analysis that was performed against the general population provides a general indication of where EcoTeams may be succeeding, and the opportunities for extending its influence. Specifically, the limited significant differences between the GAP participants and the general sample suggest that the results from the rest of this thesis may be useful for GAP, if it decides to target HIH, as is recommended here. Although participation in the programme may have contributed to heightened concern regarding climate change, this does not appear to have been translated into significant reduction in ESC. It is recommended that GAP considers how

climate change versus other environmental and social issues are emphasised in the EcoTeam programme.

The methodological interpretation of social marketing presented in this research also indicated how GAP may usefully adapt its EcoTeam programme to specifically aim to 'un-fix', and then 're-set', how needs are satisfied within the HIH groups it works with. This deep psycho-socio-cultural work would also open up a space to more usefully consider underlying values and how these are connected to modes of need satisfaction. Action research, carried out with an academic partner, is recommended to draw out the theoretical and practical effects of such an intervention and to develop the design over time.

8.7 Limitations of the research

Despite careful consideration given to the optimal research design and implementation, the study was subject to a number of limitations which guided how it was designed and how the results can be appropriately interpreted.

8.7.1 Methodological constraints

One of the most challenging aspects of this research was sampling for the quantitative stage. Studying HIH presents a number of sampling challenges. Firstly, locating them within the general population is not straightforward as it is not as easy to visually judge how wealthy someone compared to for example assessing their gender or age. Furthermore, there was, by definition, only an estimated 15%-25% likelihood of locating them by chance.

As outlined in Chapter Five, HIH are also known to be less likely to fill in questionnaires, due to increased protection of personal privacy. As well as reducing likely response rates, this also means that it is advisable to keep personal distance to avoid a sense of privacy invasion. This led to a questionnaire by post being the most appropriate research method for the quantitative stage. The requirement to have postal addresses, along with the difficulties of subjectively judging how wealthy someone may be, meant that the purchase of income-based

address data was most appropriate. This reduced the budget available meaning that only a one stage postage without a follow-up reminder was possible, again reducing likely response rates. This was mitigated somewhat by a pre-paid envelope to increase the incentive to return the questionnaire.

A further constraint was the length of the survey, which was necessary to provide a broad base of data in this relatively unexplored area of research. Although there is mixed evidence of the effect of long survey length (Burchell and Marsh, 1992), it is possible that this also reduced response rates. A prize draw was included to increase the incentive to complete the questionnaire.

The confluence of the above combination of factors meant that the response rates to the questionnaire were lower than have been achieved by some other research (e.g. Barr, 2001), however, they were not outside the lower boundaries achieved (Schaninger and Danko, 1993; Burroughs and Rindfleisch, 2002). Additionally, a question about income was included in order to assure the sample profile, despite the fact that this is judged to reduce response rates and the households had already been deemed to be higher-income by CACI. This meant that the sample was further substantially reduced. However, this did mean that the final general sample, although smaller than desired, was of high quality in that it was highly probable all respondents fell into the HIH category and the limited contact with the researcher would have reduced SDR, therefore increasing validity.

The low sample for the GAP respondents was subject to different constraints. Firstly, the researcher was reliant on GAP for how much and how up-to-date the data were. There was no way of assessing, prior to posting, what proportion of the list would be in the higher-income bracket and of those how many would respond or may have changed addresses. This resulted in the very low sample of GAP HIH. Resources constraints, as well changes of personnel within GAP, were limitations to finding ways of increasing this number.

A further constraint was that it was not possible to judge if the samples were representative of households earning over £40,000 in the UK, as these data are not available. The low sample size, combined with the lack of data on a representative sample and specific research questions that required further slicing of the sample, meant that the statistical results cannot be reliably generalised to the entire population of households earning over £40,000 in the UK. Although this was mitigated to some extent by the prudent use of only descriptive and bivariate statistics and utilisation of parametric statistic, specifically Kendall's Tau, the results must still be viewed cautiously. However, these results do provide very important initial indications about a range of behaviours and psychological orientations, which can be used as the basis of future research, and to de-risk current decisions around the social marketing campaigns. As the research dealt with a number of under-researched areas, comparison with previous results was necessarily limited to a few key studies. This serves to underline the importance of enhancing the research in this promising area.

8.7.2 Literature and topic constraints

An additional constraint of this research has been to present results from a broad, relatively unexplored research topic utilising a Pragmatic framework. This meant that the most appropriate constructs were analysed, rather than those that sit neatly within pre-existing disciplines. It also meant that focusing on one area of consumption, for example, would not have provided enough of a contribution to the topic. Additionally, although it would have been simpler to by-pass the qualitative stage and intelligently 'guess' the most appropriate survey items, given the limited research available, this was deemed to be inappropriate. As a result a large range and volume of literature and data had to be reviewed, synthesised and contrasted. This is an issue that is known to affect much sustainability consumption research, as a hybrid field (Jackson, 2005). Certainly it is hoped that the approach taken in this study will reduce the need for this broad approach in future research, where areas of interest highlighted here can be focused on.

8.8 Final remarks

This thesis has provided a foundation on which research into the environmentally impactful consumption of wealthier householders can be advanced. Given the urgency, combined with the limited resources available to address complex issues of consumption, it is vital that interventions are designed on evidence that can increase the chances of success. Despite a wide range of research concluding that income is the most significant variable related to energy use and environmental impacts, almost no research had previously considered this topic in detail. Specifically, and in light of the urgent need to increase the sustainability of consumption, no research could be found that previously investigated what might be shaping the unsustainable consumption of HIH and how interventions might be designed to target their consumption behaviour. This lack of data appears to be one of the key reasons why HIH consumption is not visibly targeted by government or NGOs. Although the topic in question is vast, and touches on a range of fundamental issues, this thesis has initiated the process of addressing this gap by providing insights into how psychological orientations, socio-demographics and needs-based motivations and constraints, influence ESC within HIH. By providing data for specific ESC behaviours, as well as at the aggregate behavioural level, this research has provided a range of insights to inform social marketing intervention and design, and future research agendas. It is hoped that this will mark the beginning of wealth and its manifestations being recognised as an important research and practitioner focus.

Additionally, this thesis highlighted the methodological and philosophical barriers to researching HIH, specifically how the dominant rational economic approach limits the options for research and intervention. By utilising a postmodern psycho-socio-cultural approach, the potential of social marketing, as a tool for addressing the income-energy use relationship, is enhanced. This also provides a conceptual bridge between psychological orientation research and social marketing. Given the short time scales and limited resources to address the global environmental crises, it is hoped that this research will contribute to effectively focusing research and practitioner activities.

APPENDICES

Appendix 1 Interview guide

Thank you for agreeing to be interviewed about your lifestyle and consumption. This interview is part of a University of Exeter study. Your comments are totally confidential and although the overall results will be published and quotes may be used, your identity will be kept anonymous. As you can see I have a recorder with me – this is necessary so I can type up the transcript afterwards but it will not be used for any other purpose – is that OK? You can withdraw from this process at any time without consequence.

I have a series of questions that I would like to put forward for you to consider. Please be as honest and open as you can – it is important that I capture what you really think so I would be grateful if you would reflect carefully on the issues. This interview is part of a wider study looking at consumption and how lifestyles affect our consumption decisions. The questions require reflection so please be open to taking time to explore what you think. I may jot down my reflections as you talk so please don't be distracted by this.

As the study is looking at a range of topics and we only have a limited time please forgive me if I have to interrupt you or focus the discussion in some way. The whole process should take about an hour and a half.

I would like to start the discussion by talking about holidays.

HOLIDAYS

How important are holidays to you and your family?

What was the most important holiday you went on in 2007?

How important was it for you to go on that holiday?

What aspects of the holiday made it so important?

Do you feel that where you go on holiday and the type of holidays you have reflects who you are as a family or an individual?

What sort of holiday would you least like to go on and why?

What is your idea of a luxury holiday? Do you take these sorts of holidays?

Why/why not?

Do you like to take holidays in the UK – why/why not?

Would you be happy only taking holidays in the UK – why/why not?

Could you imagine not taking holidays outside of Europe? Why/why not?

Do you feel you take the average number and type of holidays for a household on your level of income?

Do you have any holiday homes? (Home question primer)

Please cast your minds back to when you were earning much less money (if ever you were). How have the holidays you taken changed and why do you think that is? What role has your rising income played in changing your holiday preferences? If your household income trebled, in any given 12 month period what would be your ideal number/ type of holidays?

I would now like to move on to food.

FOOD

Who are these sort of products aimed at? (High end supermarket brands) - show examples (one bakery (Caramel Shortbread from Tesco's Finest, one vegetable (Asparagus from Co-op Truly Irresistable), one fruit (Pink Lady apples from Sainsbury's Taste the Difference).

Would you buy these sorts of food?

What are the most important factors when buying food?

What sort of food would your family would find hard to live without and why?

What foods would you never buy and why?

What puts you off buying a certain brand/type of food?

How important is eating meat to your household and why?

How important is pre-prepared food to your household and why?

Do you often buy food specifically to make a recipe you want to try or because you specifically want that food? or do you go with what is easily or cheaply available at that time of year

If you had guests round for a dinner party what would you serve them and why?

What would you feel is inappropriate to serve guests?

What sort of food would you expect to be served at a dinner party by neighbours?

Would you expect to be served meat? – would you serve meat?

Could you please cast your mind back to a time when your incomes were much lower than they are now (if there was such a time). How has your approach to food changed since that time? How have your income's affected this?

If your household income trebled what food would you eat on a weekly basis and where would you get the food from?

Do you find you often have food left after a meal or food that goes past its sell by date without being eaten? What do you do with it? (part of next section)

I am now going on to broader questions (product consumption)

How important do you feel it is to keep up with trends?

Do you try to be fashionable - how?

Would you like to have the clothes selection of a celebrity?

How often do you buy clothes or products in general? (do you buy products for life?)

How often do you clear out your wardrobe?

How often is normal do you think it is for households like yours to replace a sofa/ mobile phone/ fridge because it is out of date?

Do you tend to repair products that are broken or replace them instead? Why?

Do you buy second-hand clothes – why/why not? Would you feel awkward telling your friends you are wearing second-hand clothes? Why?

Thinking back to when your household income was much lower –has your approach to keeping up with fashions and replacing products changed? How? Why?

Some say that they will know when they have reached success when they can afford to wear a brand new pair of socks every day? Do you agree with this?

I am now going to talk about

CARS

Do you think cars are a necessity for your life?

What was the last car your household bought?

Why did you choose that particular car?

How often do you change your car and why?

How important is it to you to have the type of cars you do?

How difficult would it be to give up one or all of your cars or change it for a different (cheaper) one?

Do your cars make a statement to others about you/your family?

Would you feel awkward driving an old banger?

Does the sort of car you drive make you feel more/less successful?

How has your choice of car changed over time?

What cars/how many did you use to drive?

If you could have any car you wanted what would it be?

***** STOP FOR TEA BREAK AND SECOND PART OF SURVEY *****

I am now going to move on to looking at

HOUSES

What were the main criteria for you buying the home(s) you live in?

How important was size?

How important was location and what location were you looking for?

How important was it to be close to your place of work?

How important was it to be close to transport networks?

Is it important to have a large house?

Do you think your home makes a statement to others about your family?

What sort/size of home is normal for family with your income?

Would you feel differently as a family if you lived in a small house? Why?

How has the size and location of your homes changed over the years?

If you had unlimited finances what house(s) would you buy and why?

HEATING

What temperature do you keep your home at and why?

Has the temperature you keep your house at changed over the years – has it changed as your income has risen?

If you had unlimited finances, how would you heat your house?

When was the last time you upgraded your system?

What was the criteria you used for deciding how to upgrade it? (cost, efficiency, looks, convenience etc?)

If you had unlimited finances what system would you install?

(prompt to ask if they would like to install renewables)

What do you think of people who display solar panels and wind turbines on their homes?

Did you/would you consider using energy from a different source like ground source heat, solar panels or solar water heating and why/why not?

If you put solar panels on your roof what do you think the neighbours would think?

Has your approach to buying renewable energy changed at all over the years?

What is the main barrier to you installing it?

ENVIRONMENTAL ISSUES

Do you feel we are facing environmental issues as a planet? What problems?

What should be done about it?

Who should be doing it? (government/companies/individuals?)

What do you feel you should be doing about the problems?

Do you feel there is a conflict between being financially affluent and being environmentally friendly?

Do you feel that your lifestyle is environmentally sustainable?

What would you like to change?

The interview is now finished. Thank you for your time. Are there any questions you would like to ask?

Appendix 2 Cross cutting qualitative results

Psychological and structural results

Environmental concern

All the participants expressed some concern for the environment, either spontaneously or when questioned specifically on this at the end of the interview and this was often related to an intention to alter consumption patterns. Climate change was the main issue people referred to.

A variety of comments from a wide range of respondents indicate the general level of concern about environmental issues, but this came across as a weak repetition of social rhetoric rather than a deep reflection or understanding of the issues. The connection between environmental issues and human impact was only mentioned twice:

“I think in general everyone has become far more aware of what we are doing to the environment and we are all looking at ways of trying to alleviate what we are doing...just the fact that global warming is a massive problem so anything we can do to sort of slow that down I think is a plus.” (g)

“I think we are facing this climate change um – the house actually, - our house is very hot in the summer and you know we really – if I had my way we would be looking at air-conditioning – but of course that is not very environmentally friendly, so we are looking at wooden shutters instead....there’s just a lot more in the press about it now and more interest generally. And we can see it because – you know the climate’s changing.”
(i)

This latter respondent also commented that:

“...we’d like to put up solar panels on the roof – but we can’t afford it at the moment...but I mean it is something we should think about...it is to save money – but also cause you know you just feel that you should do these sorts of things you know. You know to sort of stop using as much in that if

we can help ourselves I think we should be trying to. But it's a shame there are no incentives." (i)

One participant produced an intellectual assessment of the situation which distanced themselves from the issue in emotional and temporal terms:

"Its such a complex thing that I think people are sceptical that its all a bit of hype. Personal view is I think that the carbon dioxide problem is real – we have got a high level since industrial revolution. So I think we have created something that is influencing the planet. Whether the measures we are taking to reduce CO2 are the way forward or whether there will be some other breakthrough...I'm not really sure and I think we are still in that – the next 10 years will tell us the answer to that – either we have to stop burning fossil fuels or not." (e)

Another noted:

"The amount of energy in this world that is going to waste is just frightening. And we are spending millions and billions producing energy and we don't need to." (d)

A further participant said:

"...we have definitely seen an increase in natural disasters, um, climatic disasters, and they seem to be linked to man's intervention with the way nature works and we seeing the effects of our interference...Too much is wasted. We are a selfish wasteful society and I think we could really cut down on a lot of things." (d)

Altruistic concerns were apparent for two participants:

"We got to the point where we were always throwing something away – but I just don't...like the idea of it. There are too many starving people in the world you know. Its...I just think it's appalling." (a)

“Not because I am especially about the environment...its more about the human side of it...we were fortunate enough to have this meal whereas millions of young children didn't.” (c)

Environmental action

The action being taken in relation to the environment was very minor and although environmental reasons for action were expressed, again this appeared to be a repetition of social convention rather than as a result of deep reflection on the issues of the environment as they relate to consumption. In all cases, reasons other than the environment came across as the most important factors driving the action:

“...in terms of sustainable living an encouraging local – the local economy and in terms of seasonal as well – that's a great thing about having a veggie box – its seasonal...” (f)

“anything biodegradable we compost.” (d)

On the criteria for a new car: “Well comfort and the 4 by 4 and it's a diesel so we felt that was a bit more friendly in terms of the environment. And the cost really as well.” (i)

“...too many things to do and can't do absolutely everything. So doing my veggies, doing my bees – contribute to the community, I can't do solar panels as well. And perhaps the amount of investment required...its not being done because of the finances – I've not actually got round to doing it.” (e)

Conflicts

At the same time all were engaging in some form of energy heavy consumption in at least one consumption category and usually more than one. For some participants this conflict or lack of action was recognised.

Conscious conflicts

In answer to the question “Do you compost you vegetables”, one respondent answered:

“ No (laughs). I know I should but I don’t”. This respondent also didn’t use up left over food as she only likes to have it freshly cooked”. (g)

Another participant clearly articulated the consciously held mismatch between their orientations and action and tied to rationalise this:

“I have been thinking about that for a while (the issue of climate change) – not that I’ve done anything about it – I must admit. I’ve made very small lifestyle changes I think but nothing sort of...car sharing and that type of thing but nothing major. ... Until my lifestyle or my work – my working life changes I don’t think I will be able to make any sort of major lifestyle changes.” (g)

Another participant expressed a similar approach:

“..personally we’ll do as much as we can to generate our own food. Um – we will probably not be very good at giving up our motor vehicles. Um – although as two of them are hobby vehicles the impact they are having is very minor compared to the road tax I pay for the privilege. So I don’t feel guilty about you know – getting rid of those two wouldn’t save the planet I don’t feel.” (a)

Another two people expressed the dissidence felt:

“But yeh I think we are facing a crisis and I think, I think we should be doing a lot more than we are.” (i)

“But I think as a human being I could do a bit more and I’m going to...I’m certainly going to be a lot more conscious.” (c)

One participant faced a difficult conflict over buying a smaller car that would be better for the environment, or an upgrade of her “huge great car” car. On the one hand she said:

“I think my thoughts on cars are changing. Obviously because of the cost of running one at the moment and economy and what its doing to the environment and everything else while I’m driving a huge great car.” (g)

On the other hand whilst she has considered a smaller car she has
“moved on from the Nissan Micra days.” (g)

Other reasons for not wanting a smaller are the comfort, safety, road holding and its power:

“to suddenly get – I would feel quite vulnerable I think in a smaller car like a Nissan Micra”. However the role of the affluent identity is apparent as she goes on to say: “my car has always reflected my income...I will always go for – yeh whatever I can afford, I would have, because its always been quite important up until now to have a nice car.” (g)

Here the affluent identity is an important need for this participant and her energy heavy car is tied up with this need fulfilment. The smaller car does not symbolically reflect her current and desired sense of self and therefore, despite environmental concern and normative pressure due to her husbands job as head of energy reduction from transport at his company, she appears unlikely to make the more environmentally aligned choice.

Unconscious conflicts

The disconnect between participant's concern and their energy heavy behaviour was generally not specifically recognised. Sometimes the expressed disconnected between the concern for the environmental and the actual behaviour that may mitigate the issue was stark:

“I would rather wear a T-shirt around the house and be warm than put on an extra jumper.” Yet when the same participant was asked just after about their ideal heating system they answered “I think I would like to go for something that is a little bit more environmentally friendly – having watched Grand Designs.” (g)

In answer to the questions: “Why did you buy that car?”, the participant noted:

“Well, comfort and the 4 by 4 and it’s a diesel so we felt that was a bit more friendly in terms of the environment. And the cost really as well.” (i)

The role of work

Work appeared to influence people’s energy consumption. For one participant work translated into a lifestyle that they felt was incompatible with reducing energy consumption:

“Until my lifestyle or my work – my working life changes I don’t think I will be able to make any sort of major lifestyle changes (in relation to climate change).” (g)

Additionally, the need to manage pressure from work appeared to shape the holiday destinations that were sought. The preliminary interview data showed this has both positive and negative impacts on energy use. One interviewee described how going on a long haul holiday somehow felt ‘bigger’ (i) than one closer to home and that because of this and the time it takes to travel, they would go away for longer and had time to focus on the holiday more due to longer preparation. Longer holidays were also more desirable as she felt it took so long to clear her diary that it was not worth it if you were not going to go away for a long time (and therefore to a far off destination). She also explained how these longer holidays allowed you to recuperate properly before coming back.

This suggests that for some the desire to alleviate the pressures of work may, via symbolic meanings of long haul holidays, result in higher energy holidays. However for another interviewee work pressures instead resulted in less holidays and more local holidays being taken instead of more exotic locations. She expressed that the effort involved in catching up on enough work has really:

“...influenced my feelings about holidays a great deal” (g)

This put her off taking holidays in the first place.

She went on to say:

“I think that’s another reason why perhaps I take a holiday in the UK is because I continually have contact with the office – I pick up my emails and it is daft but that’s the only way I can feel the I can get through a holiday sometimes.” (g)

Income and energy use results

The direct role of income on energy use

For a couple of participants the influence of income on energy heavy practices, via increasing opportunities to consume in other, preferable, ways, was clearly expressed:

“It’s made it worse (a higher income) because it’s given me the opportunity to basically do what I like with purchasing clothes and furniture.” (g)

One participant expressed the link between income and changing tastes in comfort:

“I think we got fed up with damp beds (*camping*) and we had more money – and we could afford to rent a self-catering cottage and it was just more comfortable.” (e)

For others income and energy heavy car consumption were intricately linked:

“my choice of car has always reflected my income.” (g)

This was said in relation from a change from a Nissan Micra to a Volvo C70 convertible. For three further participants an energy heavy car appeared to be particularly related to long held desires that income enabled to be fulfilled.

For one participant, income was expressly seen as a restricting force for sustainability due to the identity need for being conspicuously seen as affluent in a way that matched available finances. The sense of obligation to consume to the available income level was notable.

“...if you are financially well off it doesn’t mean – its not – you don’t have to do something about it – I think because you’ve got the money to actually spend on your heating bills, to buy your big car...I think it’s a social thing because you don’t want to be seen to be – you want to be seen in your big car and your big house and what you um and, you drive because you can afford to.” (g)

The effect of future income rises on energy consumption

Although some participants expressed contentment with their current consumption levels, most had repressed desires for increased consumption when asked about what they would buy if their income trebled:

“it would have to be a Mercedes or a BMW. I don’t like Ferrari’s and or perhaps a Jaguar or something like that would be alright.” (g)

“...an older house probably Georgian or Victorian, um with high ceilings – cause I really like high ceilings, and with a nice garden. And possibly a little swimming pool. I’d quite like a sauna”. (i)

“I’d probably take three times the amount of holidays”. (g)

“I’d probably like to see – explore a little bit more of Africa for instance.” (c)

“Art nouveau...a mansion.” (d)

“I would buy more expensive clothes because I think you can tell, you know, if you’ve spent a lot of money on something. I mean for instance my nephew got married and bought a Armani – Emporio Armani – suit and its absolutely fabulous – I mean you can so tell it is Armani”. (i)

On the ideal number of holidays, one participant noted:

“five...ski-ing wouldn’t change, summer holidays would always be some kind of a week long-haul Caribbean sort of destinations. Our other ones would be our weekends to New York – if x wants to go away for the weekend he wants to go to New York, he reckons you could go on a Friday night and could be back for work on a Sunday..you could fly back Sunday and then when you went into work on Monday it would be like – what did

you do for the weekend? Oh I went clubbing. Oh yeh where did you do that?
New York!" (b)

For two participants the result of increased income would be more European
breaks:

"I think we'd like to have more weekend breaks holidays and I'd like to get
back to going into Europe you know on weekend breaks to Europe". (i)

"I think every six to eight weeks its nice to have a break (if income
trebled)...- to have a mini breaks in the UK or Paris somewhere. It depends
where Exeter airport flies to." (f)

Appendix 3 Questionnaire summary

Section	Q.	Primary objective served	Research realm	Question description	Type	Response type	Number of response options	Likert response range descriptors	Number of items	Additional item notes
A - Spending decisions										
	1	1 & 2	Absolute and relative level of need	Importance of consumption categories	Ordinal	Likert	5	'Extremely unimportant' to 'extremely important'	5	
B - Holidays										
	2	1 & 2	Behavioural measurement	How many holidays of each type taken per year on average	Interval	Tick box or free space over 4	6 plus free space	n/a	3	
	3	2	Normative comparison	Comparison of number of holidays with others of similar income	Ordinal	Likert	5 plus 'we take none'	We take far fewer' to 'we take far more'	3	
B1 - Long distance holidays										
	4	1 & 2	Behavioural measurement	Main mode of travel to long distance destination	Categorical	Tick box	5 plus 'other'	n/a	n/a	
	5	1 & 2	Ideal consumption	Ideal number of long distance holidays per year if there were no constraints	Interval	Free space	n/a	n/a	n/a	
	6	2	Constraints to ideal consumption	Constraints to ideal number of long distance holidays	Ordinal	Likert	5	Strongly disagree' to 'strongly agree'	9 plus 'other'	
B2 - European holidays										
	7	1 & 2	Behavioural measurement	Main mode of travel to European destination	Categorical	Tick box	5 plus 'other'	n/a	n/a	
	8	1 & 2	Ideal consumption	Ideal number of European holidays per year if there were no constraints	Interval	Free space	n/a	n/a	n/a	
	9	2	Constraints to ideal consumption	Constraints to ideal number of European holidays	Ordinal	Likert	5	Strongly disagree' to 'strongly agree'	9 plus 'other'	
B3 - Holiday motivation										
	10a	2	Drivers of consumption	Drivers of holidays	Ordinal	Likert	5	'Extremely unimportant' to 'extremely important'	17 plus 'other'	
	10b	2	Drivers of consumption as relates to types of consumption	Drivers of holidays as relates to holiday destination	Categorical	Tick box	2	n/a	17 plus 'other'	
Section C - Cars										
	11a	1 & 2	Behavioural measurement	Make, model, engine size and mileage of all cars in household	Categorical	Free space	n/a	n/a	n/a	
	11b			Importance of cars in household	Ordinal	Likert	5	'Extremely unimportant' to 'extremely important'	n/a	
	12	1 & 2	Behavioural measurement	Preferred car of those owned	Categorical	Free space	n/a	n/a	n/a	
	13	2	Drivers of consumption	Drivers of car choice	Ordinal	Likert	5	'Extremely unimportant' to 'extremely important'	25 plus 'other'	
	14	2	Normative comparison	Preferred car compared to cars of others on similar income	Ordinal	Likert	5	Each item scale individually marked	5	
	15	1 & 2	Ideal consumption	Ideal choice of car	Categorical	Free space	n/a	n/a	n/a	
	16	1 & 2	Ideal consumption	Ideal car compared to current preferred car if there were no constraints	Ordinal	Likert	5	Each item scale individually marked - as per Q.14	5	
	17	2	Constraints to ideal consumption	Constraints to owning ideal car	Ordinal	Likert	5	Strongly disagree' to 'strongly agree'	9 plus 'other'	

Section	Q.	Primary objective served	Research realm	Question description	Type	Response type	Number of response options	Likert response range descriptors	Number of items	Additional item notes
Section D - Products										
	18		2 Drivers of consumption	Approach to durable product buying	Ordinal	Likert	5	Strongly disagree' to 'strongly agree'	9 plus 'other'	Items a,b,d reversed for analysis
	19	1 & 2	Ideal consumption	Result (in form) of removing constraints to buying new durable products	Ordinal	Likert	5	Each item scale individually marked		5 Items 1 and 3 reversed for analysis
	20	1 & 2	Behavioural measurement	Number of new durable products bought a month	Ordinal	Tick box	14		n/a	n/a
	21	2	Normative comparison	Number of new durable products bought a month compared with others on similar income of number	Ordinal	Likert	5	I buy far more' to I buy far fewer'		1
	22	1 & 2	Ideal consumption	Ideal number of new durable products bought if there were no constraints	Ordinal	Tick box	14		n/a	n/a
	23	2	Constraints to ideal consumption	Constraints to buying ideal number of	Ordinal	Likert	5	Strongly disagree' to 'strongly agree'	9 plus 'other'	
Section E - Your personal perspective										
	24	1	Environmental Concern	Two most important issues facing the UK	Categorical	Tick	15 plus 'other'		n/a	n/a
	25	1	Materialism	Materialism scale	Ordinal	Likert	5	Strongly disagree' to 'strongly agree'	20 (instead of 22)	Items b,c,e,f,g,h,i,m,r,s,t reversed for analysis
	26	1	Values	Values identification	Ordinal	Likert	5	'Extremely unimportant' to 'extremely important'	13 plus 'other'	Items b,d,i,l biospheric, a,e,h,k altruistic, c,f,g,j,m egoistic
Section F - Your sense of self										
	27	1	Identity	Affluent identity adherence	Ordinal	Likert	5	Strongly disagree' to 'strongly agree'		5
	28	1	Identity	Environmentalist identity adherence	Ordinal	Likert	5	Strongly disagree' to 'strongly agree'		5
Section G - Socio-demographic information										
	29	1 & 2	Socio-demographics	Age	Ordinal	Tick box	6		n/a	n/a
	30	1 & 2	Socio-demographics	Gender	Categorical	Tick box	2		n/a	n/a
	31	1 & 2	Socio-demographics	Working status	Categorical	Tick box	7		n/a	n/a
	32	1 & 2	Socio-demographics	Occupation	Categorical	Free space	n/a		n/a	n/a
	33	1 & 2	Socio-demographics	Education	Ordinal (with degree and vocational qualification swapped)	Tick box	6		n/a	n/a
	34a	1 & 2	Socio-demographics	Household size	Interval	Free space	n/a		n/a	n/a
	34b	1 & 2	Socio-demographics	Household structure	Interval	Free space	n/a		n/a	6
	35	1 & 2	Socio-demographics	Income	Ordinal	Tick box	6		n/a	n/a
	36	1 & 2	Socio-demographics	Assets	Ordinal	Tick box	6		n/a	n/a
	37	1 & 2	Socio-demographics	Newspaper readership	Categorical	Free space	n/a		n/a	n/a
	38	1 & 2	Behavioural measurement	Average annual household fuel bill	Interval	Free space	n/a		n/a	n/a
	39	3	GAP	Indication of involvement in a GAP programme	Categorical	Tick box (yes/no) and free space for description	2		n/a	441 n/a

Appendix 4 Final questionnaire



GREAT WESTERN
RESEARCH



SCHOOL OF GEOGRAPHY

SCHOOL OFFICE
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UK EX4 4RJ

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HEAD OF HOUSEHOLD
XXXX XXXX

If you require a large print questionnaire please contact:
Victoria Hurth
Email: vmfh202@ex.ac.uk
Tel: 07706 361085

Dear Householder,

As part of a University of Exeter research project we would like to invite you to take part in an important and confidential survey on consumption and lifestyles, specifically your household's cars, holidays and product purchases. **Only a small number of households have been selected**, therefore your response is very important to us and we would be grateful if you would complete the questionnaire and return it to the address at the bottom of this page using the **freepost envelope** enclosed. Summary results can be provided if you indicate your interest and supply your email or address below.

Voluntary and confidential: Participation in this research is entirely voluntary and you can withdraw participation at any time without further explanation. The information you give is confidential and will only be used as part of generalised results. Any specific references to results will be made anonymous. Completion and return of the survey will be accepted as your consent for us to use this data for purely academic, non-commercial purposes.

Prize draw: We are offering the opportunity for participants who complete this survey to win one of 3 prizes. The first prize is a £25 Marks and Spencer voucher and second and third prize are £10 vouchers. If you would like to enter the draw please indicate below and fill in your details. Winners will be chosen randomly the day after the survey deadline and will be informed the week after.

Follow-up interviews: For the final stage of the research we are conducting short follow-up interviews for selected participants. If you are willing to take part, please fill in your details and indicate you would like to be included.

I would like to: Enter the prize draw ☐ Take part in a follow-up interview ☐ Receive summary results ☐

Name	
Address	
Telephone	
E-mail *	

* required for summary results, if you don't have an email please tick here ☐ and results will be sent by post

Confidentiality: Your details will be used to identify the prize draw winners and/or to arrange a follow up interview or to email summary results and will be used in no other way.

Thank you again for your participation.

Yours Faithfully,

Victoria Hurth

Thank you for taking part. We are very interested to know your personal opinions on your household's holidays, cars and the products you buy - there are no right or wrong answers, please just be as honest as possible. Although we are asking about your household we understand you can only answer questions from your individual perspective.

Instructions on how each question should be answered are given. If you do not have enough room to answer the questions or would like to add more information, then please use the blank back page and indicate what question you are referring to.

Please complete all the following questions as missing data makes it difficult to process your results - there are questions on both sides of each page. Please remember to use the full range of options available, if appropriate. **Please return the completed questionnaires using the pre-paid envelope enclosed.**

SECTION A: SPENDING DECISIONS We are interested to know about your spending decisions

1. When deciding how to spend your total household income how important are the following compared to all other purchases?:

		Extremely Unimportant	Un-important	Neither important nor unimportant	Important	Extremely important
a	Going on long distance holidays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Going on European holidays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Having the car of your choice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Buying new products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION B: HOLIDAYS We are interested to know about your long distance and European holidays

2. Please answer the following questions. **Please tick one box for each question and round up any averages.**

		0	1	2	3	4	>4	If more than 4 please specify number
a	On average how many long distance holidays do you take a year?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b	On average how many European holidays do you take a year?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

3. In general, how do you feel the number of long distance and European holidays you take a year compares to other households on a similar income? **Please tick one box for each line.**

	We take none	We take far fewer	We take fewer	We take about the same	We take more	We take far more
Long distance holidays a year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
European holidays a year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION B1: Long distance holidays

We would now like to ask specifically about your holidays outside of the UK or Europe. If you do not take holidays outside of the UK or Europe please tick here ☐ and move to section B2

4. What is the main way you get to your long distance destination? **(Please tick one only)**

Plane ☐ Train ☐ Car ☐ Coach ☐ Boat ☐ Other ☐

5. How many long distance holidays **would you ideally** take a year if there were no barriers (including financial) _____

6. Please indicate how far you agree with each of the following statements about what is stopping you take your ideal number of long distance holidays. **Please tick one box for each line. If you have an additional barrier please add to the last line.**

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a	I don't have the time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	I don't have the money	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

c	It wouldn't fit with my values	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	<i>I am at the wrong stage of life</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	I would feel guilty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	<i>My friends and family would disapprove</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	It wouldn't fit with my identity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	<i>It is impractical</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	In reality I would not enjoy it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify):		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION B2: European holidays

We would now like to ask specifically about your holidays outside of the UK but within Europe. If you do not take holidays outside of the UK please tick here ☐ and move to section C.

7. What is the main way you get to your European destination? (Please tick one only)

Plane ☐ Train ☐ Car ☐ Coach ☐ Boat ☐ Other ☐

8. How many European holidays **would you ideally** take a year if there were no barriers (including financial) _____

9. Please indicate how far you agree with each of the following statements about what is stopping you take your ideal number of European holidays. **Please tick one box for each statement. If you have an additional barrier please add to the last line.**

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a	I don't have the time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	<i>I don't have the money</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	It wouldn't fit with my values	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	<i>I am at the wrong stage of life</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	I would feel guilty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	<i>My friends and family would disapprove</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	It wouldn't fit with my identity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	<i>It is impractical</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	In reality I would not enjoy it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify):		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION B3: Holiday motivation. We would now like to ask you about why you take holidays.

10. How important are each of the following factors in motivating you to take holidays **and** which type of holiday (long distance or European) is best at providing the important factors. Please put **one tick** indicating importance and **one tick** for which type of holiday provides this best. **Please only provide the second tick where the factor is either important or extremely important**

		Extremely un-important	Un-important	Neither important nor unimportant	Important	Extremely important		
a	To experience a different lifestyle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<div style="display: flex; align-items: center;"> <div style="flex: 1; border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="flex: 1; border-bottom: 1px solid black; margin-bottom: 5px;"></div> </div> If important or extremely important, please indicate which type of holiday fulfils this need best	
b	<i>Because I can afford it</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
c	To spend time with people close to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
							Long-distance	European
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>

	Extremely un-important	Un-important	Neither important nor unimportant	Important	Extremely important	Long-distance	European
d To find out how other people live	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e To take me away from the routine of life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F To make me feel free	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g To alleviate pressure that builds up in my life from time to time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h To relax	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i To provide something interesting to share with friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J To be in sunny weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k To be in beautiful surroundings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l To provide stimulating experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m To interact with new people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n To give me something exciting to look forward to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o To pursue my hobbies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p To interact with people who are similar to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q To find out about myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION C: CARS

In this section we would like to collect some information about the car(s) you own or lease long-term, why you own them and what car you would ideally like to own. If you do not have a car in your household please tick here ☐ and move to question 13.

11. Please list the type, make, model engine size and annual mileage of all the cars in your household. **For each car please tick one box depending on how important it is for you to have that car.**

1) Make: (e.g. Seat)	2) Model: (e.g. Ibiza)	3) Engine size (e.g. 1.9)	4) Annual mileage	5) Extremely unimportant	Un-important	Neither important nor unimportant	Important	Extremely important
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. If you own more than one car which do you like owning the most? _____

13. Which factors are important in making you like this particular car? **Please tick one box for each of the statements.**

	Extremely unimportant	Unimportant	Neither important nor unimportant	Important	Extremely important
a It is fun to drive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b It is attractive to others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Its makes me feel in control of my driving experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d It reflects my gender	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e It is part of a hobby interest in cars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Extremely unimportant	Unimportant	Neither important nor unimportant	Important	Extremely important
f	<i>It looks good</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	<i>It will last me a long time</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	<i>It is economical</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	<i>It suits me</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j	<i>It is comfortable</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k	<i>It commands respect from other road users</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l	<i>It feels like it is well built</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m	<i>It is suited to my household's social status</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n	<i>It attracts attention</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o	<i>It makes me feel safe</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p	<i>It suits my stage of life</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q	<i>It is a brand I am used to</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
r	<i>It has a low environmental impact</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
s	<i>It is spacious enough</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
t	<i>It is suited to my household's professional status</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
u	<i>It is exciting to drive</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
v	<i>It has lots of accessories and special features</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
w	<i>It shows I am not 'one of the crowd'</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
x	<i>It indicates to others that I am financially successful</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
y	<i>It is reliable</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Other (please specify):</i>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. In general how do you feel this particular car compares to the cars of other households with a similar income?

Please tick one box on each line

← The same →

Less expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	More expensive
Less powerful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	More powerful
Smaller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Larger
Newer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Older
Less prestigious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	More prestigious

15. What car would you like have as your principal car if there were no barriers (including financial)? _____

16. How does your ideal car compare to the principal car you use now?

Please tick one box on each line

← The same →

Less expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	More expensive
Less powerful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	More powerful
Smaller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Larger
Newer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Older
Less prestigious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	More prestigious

17. What do you think are the main barriers to you obtaining your ideal car? **Please tick one box for each of the statements. If you have an additional barrier please add to the last line.**

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a I don't have the time to consider it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b I don't have the money	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c It wouldn't fit with my values	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d I am at the wrong stage of life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e I would feel guilty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f My friends and family would disapprove	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g It wouldn't fit with my identity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h It is impractical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i In reality I wouldn't enjoy owning it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION D: PRODUCTS

In this section we would like to collect some information about the durable products and clothes that you buy.

18. Please rate how far you agree with the following statements in terms of your approach to the **durable goods** and **clothes** you buy (durable goods include a range of items like washing machines, MP3 players, bags and cutlery). Although your approach may vary by product please generalise using your initial instinct. **Please tick one box for each statements**

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a I don't buy new products if used ones are available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b I buy products that have a history	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c I am not the sort of person that buys used goods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d I only buy new products when old ones break	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e When a product breaks it is a good excuse to go shopping for a new one	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f I am the sort of person who has up to date products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g I don't buy second hand products as they are normally of lower quality than new ones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h It is exciting to have the most up to date products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i It is important to have products that match each other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. If all barriers to you buying **durable goods and clothes** (including financial barriers) were removed, what would be the result?

Please tick one box on each line									
					The same				
More new products purchased	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fewer new products purchased
More second-hand products bought	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fewer second-hand products bought
More products disposed of	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fewer products disposed of
More products repaired	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fewer products repaired
More products bought for life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fewer products bought for life

20. How many new durable goods and clothes does your household buy a month on average? **Please make an estimation and tick one.**

0 ☐ 1-3 ☐ 4-6 ☐ 7-9 ☐ 10-13 ☐ 13-15 ☐ 16-18 ☐ 19-21 ☐ 22-24 ☐ 25-27 ☐ 28-30 ☐ 30+ ☐ 40+ ☐ 50+ ☐

21. In general how do you feel the number of new durable goods and clothes your household buys compares to others on a similar income? **Please tick one.**

I buy far more ☐ I buy more ☐ I buy about the same ☐ I buy fewer ☐ I buy far fewer ☐

22. If all barriers were removed, ideally how many new durable goods and clothes would you buy a month? **Please make an estimation and tick one.**

0 ☐ 1-3 ☐ 4-6 ☐ 7-9 ☐ 10-13 ☐ 13-15 ☐ 16-18 ☐ 19-21 ☐ 22-24 ☐ 25-27 ☐ 28-30 ☐ 30+ ☐ 40+ ☐ 50+ ☐

23. What are the main barriers to you buying your ideal number of new durable goods and clothes? **Please tick one box for each of the statements. If you have an additional barrier please add to the last line.**

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a	I don't have the time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	<i>I don't have the money</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	It wouldn't fit with my values	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	<i>I am at the wrong stage of life</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	I would feel guilty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	<i>My friends and family would disapprove</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	It wouldn't fit with my identity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	<i>It is impractical</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	In reality I would not enjoy it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<i>Other (please specify):</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION E: YOUR PERSONAL PERSPECTIVE

In this section we need to collect some information about your personal perspective

24. What do you think are the **two** most important issues facing the UK? **(Please tick two)**

Crime	Unemployment	Healthcare system
Economic situation	Terrorism	Climate change
Rising prices\ inflation	Protecting the environment	The educational system
Energy related issues	Defence\ Foreign affairs	Other (please specify):
Taxation	Housing	
Immigration	Pensions	

25. How far do you agree with the following statements? **Please tick one box for each statement.**

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a	I admire people who own expensive homes, cars, and clothes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	I usually buy only the things I need	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	I have all the things I really need to enjoy life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Some of the most important achievements in life include acquiring material possessions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	I try to keep my life simple, as far as possessions are concerned	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Having a job that helps people matters more than having a job that pays a lot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	I don't place much emphasis on the amount of material objects people own as a sign of success	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	The things I own aren't all that important to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	My life would be better if I owned certain things I don't have	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

j	The things I own say a lot about how well I'm doing in life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k	I enjoy spending money on things that aren't practical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l	I enjoy sharing my things with other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m	I wouldn't be any happier if I owned nicer things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n	Buying things gives me a lot of pleasure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o	I like to own things that impress people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p	I like a lot of luxury in my life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q	I'd be happier if I could afford to buy more things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
r	I enjoy giving things or money to charity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
s	I don't pay much attention to the material objects other people own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
t	I put less emphasis on material things than most people I know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

26. Below, thirteen values are described. The explanation of each value is given in the brackets following each value. Please indicate how important each value is for you **AS A GUIDING PRINCIPLE IN YOUR LIFE**.

	Extremely unimportant	Unimportant	Neither important nor unimportant	Important	Extremely important
a EQUALITY (equal opportunity for all)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b RESPECTING THE EARTH (harmony with other species)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c SOCIAL POWER (control over others, dominance)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d UNITY WITH NATURE (fitting into nature)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e A WORLD AT PEACE (free of war and conflict)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f WEALTH (material possessions, money)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g AUTHORITY (the right to lead or command)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h SOCIAL JUSTICE (correcting injustice, care for the weak)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i PROTECTING THE ENVIRONMENT (preserving nature)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j INFLUENTIAL (having an impact on people and events)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k HELPFUL (working for the welfare of others)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l PREVENTING POLLUTION (protecting natural resources)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m AMBITIOUS (hard-working, aspiring)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION F: YOUR SENSE OF SELF

27. Please indicate how far you agree with the following statements. **Please tick one box for each line.**

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a I see myself as a financially successful person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Others see me as a financially successful person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c I find I relate well to financially successful people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d In general, it is seen as positive to be a financially successful person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Many of my career decisions have been motivated by the desire to be financially successful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28. Please indicate how far you agree with the following statements. **Please tick one box for each line.**

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a	I see myself as an environmentalist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Others see me as an environmentalist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	I find I relate well to environmentalists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	In general, it is seen as positive to be an environmentalist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Many of my career decisions have been motivated by the desire to be an environmentalist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION G: SOCIO-DEMOGRAPHIC INFORMATION

In this final section we would like to collect some socio-demographic details

29. What is your age? Under 29 ☐ 30-40 ☐ 41-50 ☐ 51-64 ☐ 65+ ☐

30. What is your gender? Female: ☐ Male: ☐

31. What is your working status? Full-time paid worker ☐ Part-time paid worker ☐ Unwaged ☐ Retired ☐
(Please tick one) Voluntary worker ☐ Self-employed ☐ Seeking employment ☐

32. If you are working please state your occupation or your previous occupation, if retired : _____

33. Which is the highest formal qualifications you have (please tick one):

No Qualifications ☐ O-levels/ GCE/GCSE ☐ A-levels ☐ First degree (e.g. BSc, BA) ☐ Vocational qualification ☐ Higher degree (e.g. Masters, PhD) ☐

34. Including yourself, how many people live in your household? _____

Of these how many are: Babies? (5 and under) _____ Children? (6-15) _____ Young adults: (16-25) _____
Adults (25-59)? _____ Pensionable age? (60 and over) _____ 75 and over _____

35. What is the total approximate gross income (before tax) of all working adults in your household (excluding any lodgers) (please include all income sources e.g. interest from savings, investments, pensions and employment)?

Under £39,999 ☐ Over £39,999 ☐ Over £59,999 ☐ Over £79,999 ☐ Over £100,000 ☐ Over £300,000 ☐

36. Please give an approximation of your household's total assets

£0 – 74,999 ☐ Over £75,000 ☐ Over £150,000 ☐ Over £300,000 ☐ Over £600,000 ☐ Over £1,000,000 ☐

37. Which daily national newspaper do you read most or associate with most: _____

38. What is your average annual total fuel bill for your principal home (for gas, electricity and heating oil) £ _____

39. Have you ever been involved in a Global Action Plan programme? No: ☐ Yes: ☐ If yes please specify which one and when _____

Further Comments: please use the space provided on the blank page on the back of the cover letter to add any other comments you feel would be useful.

Thank you for completing this questionnaire, it is very important to us. Please check you have completed all the questions and then return the completed questionnaire using the pre-paid envelope enclosed.

If you would like to be interviewed as part of this research project please fill in your details on the front page and tick the appropriate box.

Appendix 5 Calculating the energy impact of ESC categories

Leisure flights

Although there are many energy impacts of a holiday, this study concerns itself only with the energy from the main travel to and from the destination. To calculate an energy impact for each return travel mode, DEFRA's conversion tables, which were produced to enable business to assess their carbon emissions, were used to calculate carbon dioxide for flights (2007c). These figures were then converted into kWh using conversion figures by fuel using figures derived from the US Environmental Protection Agency (Green Logistics, 2008). The long-distance estimate is based on a flight length of 6482 km and European flight estimate on a short haul international average of 1108km. Actual flight distances do however vary significantly as recognized by DEFRA (2007c). These are one way flights so these have been doubled for return. Radiative forcing has not been included in the carbon dioxide figures.

The energy consumption of leisure flights

Type of journey	Avg km travelled per leg*	Kg CO2 per person kilometre	Upflit factor for circling and delays**	Total kg CO2 ppkm	One way kg CO2 per person km	Return kg Co2 per person km	kg CO2 /kg fuel***	kg Co2/kWh*	kWh per kg CO2	Total kWh per return journey per
Long distance	6482	0.1056	109%	0.1151	746	1492	3.15 kg	0.2337	4.28	6385
European	1108	0.1304	109%	0.1421	157	315	3.15 kg	0.2337	4.28	1348

* DEFRA conversion factors (2007)

** IPCC in DEFRA conversion factors (2007)

*** European Environment Agency (2006)

**** Green Logistics (2008)

Cars

The questionnaire asked for details of each of the respondent household's cars in terms of make, model, engine size and average miles travelled per year. This level of detail means a relatively accurate estimation of the CO₂ emissions and kWh of energy used per adult can be calculated.

To establish the CO₂ emissions there were two main options. Firstly there was an option to use the Vehicle Certification Agency's (VCA) car fuel database where data on models from 2000 onwards are available. The second option was to use DEFRA's Conversion Factors Guidebook which details average grams of CO₂ by size of car (DEFRA 2007c:17). The second option was chosen. The key reason for using the less specific DEFRA figure was because in order to minimise the details a respondent had to provide, the fuel type and vehicle's age was not asked. It was assumed that the age of car and fuel type would be more difficult to remember than other questions, especially when considering cars predominantly used by other members. This might have led to non-responses for the section. Consequently, accurate figures could not be drawn from the VCA database as grams of CO₂ per km are extremely varied depending on the age of the car and its fuel type. DEFRA's figures are also given by fuel type so in order to calculate prudent figures, the less polluting diesel engine figures were used.

In the questionnaire, energy behaviour questions were asked in relation to the household rather than the respondent. Therefore to be able to equate the energy behaviour to personal values, total energy use for cars was divided by the number of adults in the household.

Adults were classified in the questionnaire as people aged 26 and older. It is recognised that in some cases cars may be owned by youth between the ages of 18 and 24 who are old enough to drive. However as it was not possible to establish where this was the case without creating an unduly lengthy questionnaire, only people categorised as adults were used to create the energy impact of the respondent. This will lead to higher estimates for some respondent's. The CO₂ figure per respondent was then converted into energy use by using a conversion factor (Green Logistics Consultants 2010).

Fuel use

It was not possible to assess the average heating oil consumption, additionally although heating oil is common in the South West due to the large numbers of rural

area, all the areas sampled are relatively urban. Therefore only the proportions of gas to electricity have been used to assess the energy impact of the respondents fuel bill. The average proportions of electricity to gas in KWh are approximately 75% gas to 24% electricity to 1% heating oil (using DUKES data – see energy proportions spreadsheet. Using government derived estimates of average costs (BEC, 2008) this equates to 48.4% of an average household bill being spent on gas and 50.9% on electricity and 0.7% heating oil. Using this ratio an average figure of 13.3 kilowatt hours per £1 spent is calculated.

Appendix 6 Pilot questionnaire

Thank you for taking part in this questionnaire pilot. We would be grateful if you could complete the questionnaire and at the same time consider the following questions. Your feedback is very important and will be used to modify the final questionnaire.

Please time how long it takes you to complete the questionnaire, excluding breaks. Please note any breaks you take.

Time taken:

Number and time of breaks:

A) Covering letter

1) What were your reactions to the cover letter?

2) Does the prize draw provide an incentive?

3) Do you feel comfortable with how your information will be used?

B) Main body of the questionnaire

4) What were your overall reactions to the questionnaire?

5) Were the instructions clear?

6) Was the layout clear and attractive?

7) Were any questions unclear or ambiguous?

8) Do you object to answering any questions?

9) Please list any questions that were difficult to answer and specify reasons

--

10) Did the response scale (five options) provide you with enough options to express your feeling on the subject?

--

11) What themes or areas received either too much or not enough attention – please specify?

--

12) Are there any issues, concerns or suggestions you would like to make to improve the questionnaire? If one section was to be removed which one do you think it should be?

--

Any other comments?

--

Appendix 7 Example prize winner's letter

Victoria Hurth
University of Exeter
Amory Building
Rennes Drive
Exeter
EX4 4RJ

xxxx
xxxx
xxxx

16th November 2009

Dear xxxx,

Thank you very much for taking the time to fill in the questionnaire I sent you. I am pleased to inform you that your name was randomly chosen as the first prize winner of the draw and enclosed is the £25 Marks and Spencer voucher. Congratulations!

Yours sincerely

Victoria Hurth

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